



SPECIAL STATUS SPECIES

Proposed Resource Management Plan Amendment/ Final Environmental Impact Statement

Volume I

Pecos District Office, Roswell, New Mexico

November 2007



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*To sustain the health, diversity, and productivity of the public land
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BUREAU OF LAND MANAGEMENT

Roswell District Office
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Roswell, New Mexico 88201
www.nm.blm.gov



IN REPLY REFER TO:
1610(500)

November 2007

Dear Reader:

Enclosed for your review is the Proposed Special Status Species Resource Management Plan Amendment (PRMPA/FEIS) and Final Environmental Impact Statement (FEIS). The PRMPA/FEIS was prepared by the Bureau of Land Management (BLM) in consultation with cooperating agencies, taking into account public comments received during this planning effort. This PRMPA/FEIS provides a framework for the future management direction and appropriate use of public land and resources within the Planning Area, located in Chaves, Eddy, Lea, and Roosevelt Counties, New Mexico. The document contains both land use planning decisions and implementing decisions to provide planning structure. The PRMP is open for a 30-day review and protest period beginning on the date the Environmental Protection Agency publishes the Notice of Availability of the FEIS in the *Federal Register*.

This PRMPA/FEIS and FEIS has been developed in accordance with the National Environmental Policy Act of 1969 (NEPA), and the Federal Land Policy and Management Act of 1976. The PRMPA/FEIS is largely based on Alternative B, the preferred alternative in the Draft Resource Management Plan Amendment/Environmental Impact Statement (RMPA/EIS), which was released on October 20, 2006. This document contains the proposed plan, predictable impacts of the proposed plan, summary of the written and verbal comments received during the public review period of the Draft RMPA/EIS, and responses to the comments received.

Any person who participated in the planning process for this PRMP, and has an interest which is or may be adversely affected, may protest approval of this PRMP and land use planning decisions contained within it (see 43 Code of Federal Regulations 1610.5-2) during this 30-day period. Only those persons or organizations who participated in the planning process leading to the PRMP may protest. The protesting party may raise only those issues submitted for the record during the planning process leading up to the publication of this PRMP. These issues may have been raised by the protesting party or others. New issues may not be brought into the record at the protest stage. E-mail and faxed protests will not be accepted as valid protests unless the protesting party also provides the original letter by either regular or overnight mail postmarked by the close of the protest period. Under these conditions, the BLM will consider the e-mail or faxed protest as an advance copy and it will receive full consideration. If you wish to provide the BLM with such advance notification, please direct faxed protests to the attention of the BLM protest coordinator at 202-452-5112, and e-mails to: Brenda Hudgens-Williams blm.gov.

All protests, including the follow-up letter (if e-mailing or faxing) must be in writing and mailed to the following address:

Regular Mail:
Director (210)
Attention: Brenda Williams
P.O. Box 66538
Washington, D.C. 20035

Overnight Mail:
Director (210)
Attention: Brenda Williams
1620 L Street, N.W., Suite 1075
Washington, D.C. 20036

All protests must be postmarked on or before December 3, 2007.

IMPORTANT: In accordance with 43 CFR 1610.5-2 the protest must contain the information described in the following critical elements check list:

- The name, mailing address, and telephone number of the person filing the protest.
- The "interest" of the person filing the protest (how will you be adversely affected by the approval or amendment of the resource management plan?).
- A statement of the part(s) of the PRMP, and the issue(s) being protested. (To the extent possible, this should reference specific pages, paragraphs, sections, tables, maps, etc., which are believed to be incorrect or incomplete.)
- A copy of all documents addressing the issue(s) that the protesting party submitted during the planning process OR a statement of the date they were discussed for the record.
- A concise statement explaining why the protestor believes the BLM State Director's proposed decision is incorrect.

All of these elements are critical parts of your protest. Take care to document all relevant facts. As much as possible, reference or cite the planning documents, or available planning records (e.g. meeting minutes or summaries, correspondence, etc.). To aid in ensuring the completeness of your protest, a printable protest check list is available online at <http://www.nm.blm.gov>.

The BLM Director will make every attempt to promptly render a decision on the protest. The decision will be in writing and will be sent to the protesting party by certified mail, return receipt requested. The decision of the BLM Director shall be the final decision of the Department of the Interior.

BLM's practice is to make comments, including names and home addresses of respondents, available for public review. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, be advised that your entire comment - including your personal identifying information - may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so. All submissions from

organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations and businesses, will be available for public inspection in their entirety.

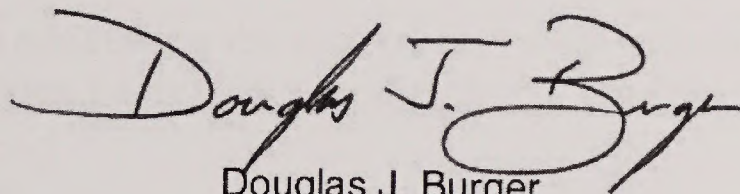
Unlike land use planning decisions, implementing decisions are not subject to protest under planning regulations but are subject to administrative remedies and review, primarily through appeals to the Office of Hearings and Appeals (Interior Board of Land Appeals).

Implementation decisions generally constitute BLM's final approval allowing on-the ground actions to proceed. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations after BLM resolves the protests to land use planning decisions and makes a decision to adopt or amend the Resource Management Plan (RMP).

These administrative remedies for final implementation decisions usually take the form of appeals to Office of Hearings and Appeals, though for certain proposed or non-final implementation decisions, such as proposed grazing decisions, the regulations provide for an internal agency review (usually a protest to the Authorized Officer) which must be completed before the final implementation decision can be appealed to the Office of Hearing and Appeals. This type of protest to the Authorized Officer should not be confused with the protest of land use planning decisions to the BLM Director.

Upon resolution of any protests, an Approved Plan and Record of Decision (ROD) will be issued. The Approved Plan will be mailed to all who participated in the planning process and will be available to all parties through the "Planning" page of the BLM national website (<http://www.blm.gov>), or by mail upon request. The Approved RMP and ROD will include the appeals process for implementing decisions that may be appealed to the Office of Hearing and Appeals following its publication.

Sincerely,

A handwritten signature in black ink, appearing to read "Douglas J. Burger". The signature is stylized with a large, sweeping "D" and a prominent "B".

Douglas J. Burger
District Manager

Resource Management Plan Protest Critical Item Checklist

The following items *must* be included to constitute a valid protest
whether using this optional format, or a narrative letter.

(43 CFR 1610.5-2)

BLM's practice is to make comments, including names and home addresses of respondents, available for public review. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, be advised that your entire comment--including your personal identifying information--may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations and businesses, will be available for public inspection in their entirety.

Resource Management Plan (RMP) or Amendment (RMPA) being protested:

Name:

Address:

Phone Number: ()

Your interest in filing this protest (how will you be adversely affected by the approval or amendment of this plan?):

Issue or issues being protested:

Statement of the part or parts of the plan being protested:

Chapter:

Section:

Page:

(or) Map:

Attach copies of all documents addressing the issue(s) that were submitted during the planning process by the protesting party, OR an indication of the date the issue(s) were discussed for the record.

Date(s):

A concise statement explaining why the State Director's decisions is believed to be wrong:

SPECIAL STATUS SPECIES RESOURCE MANAGEMENT PLAN AMENDMENT ENVIRONMENTAL IMPACT STATEMENT

Draft ()

Final (X)

LEAD AGENCY: U.S. Department of the Interior, Bureau of Land Management

TYPE OF ACTION: Administrative

JURISDICTION: Chaves, Eddy, Lea and Roosevelt Counties, New Mexico

ABSTRACT

This Final Environmental Impact Statement (FEIS) addresses the proposed resource management plan amendment and the impacts of that plan for managing habitat for special status species in portions of Chaves, Eddy, Lea and Roosevelt Counties, New Mexico. Land status in the planning area is a mix of public land administered by the Bureau of Land Management (BLM), Pecos District Office (46 percent), State Trust Land administered by the New Mexico State Land Office (17 percent) and privately-owned land (37 percent). BLM's management actions must remain consistent with the principles of multiple-use and sustained yield as directed by the Federal Land Policy and Management Act of 1976.

This document presents the proposed plan for managing public lands and resources within the planning area. The proposed plan amendment is a refinement of the preferred alternative (Alternative B) presented in the Draft RMPA/EIS published in October 2006. When the Special Status Species RMPA is completed, it will amend the 1988 Carlsbad Resource Management Plan and the 1997 Roswell Resource Management Plan.

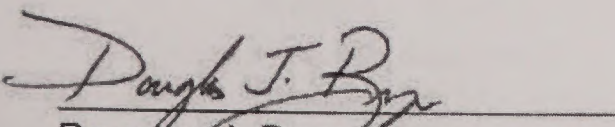
Filing a Protest:

All parts of the proposed plan amendment may be protested by parties who participated in the planning process. Refer to the Dear Reader letter for instructions on filing a protest. A 30-day protest period begins when the Environmental Protection Agency publishes in the *Federal Register* its Notice of Availability of the final environmental impact statement containing the Proposed Special Status Species RMPA.

CONTACT: Howard Parman, RMPA/EIS Team Leader
BLM Pecos District Office
2909 West Second Street
Roswell, New Mexico 88201

RECOMMENDED

APPROVED


Douglas J. Burger
Pecos District Manager

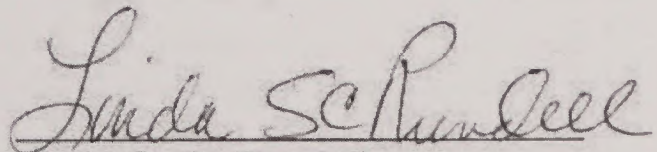

Linda S. C. Rundell
State Director New Mexico

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Executive Summary



EXECUTIVE SUMMARY

The Pecos District Office of the Bureau of Land Management (BLM) has prepared this Special Status Species Resource Management Plan Amendment (RMPA) and Environmental Impact Statement (EIS) to address specific management prescriptions to ensure the continued habitat protection of two special status species, the lesser prairie-chicken (*Tympanuchus pallidicinctus*) and the sand dune lizard (*Sceloporus arenicolus*), while allowing other resource uses and activities to continue within the Planning Area. The Planning Area includes public land surface and Federal mineral estate on portions of the Carlsbad and Roswell Field Offices. See Map 1-1. The RMPA will amend BLM's 1988 Carlsbad Resource Management Plan (RMP), including amendments approved since that date, and BLM's 1997 Roswell RMP.

Three factors are driving the need for amending these two RMPs: Federal regulations and policies that address special status species and public land use planning and management; related changing resource demands and conditions that may affect the special status species' habitat in the Planning Area; and a focus on expanding interagency coordination through the land use planning implementation process. Federal regulations and policies require the BLM to make its public land and resources available based on the principle of multiple-use. At the same time, it is BLM policy to conserve special status species and their habitats, and ensure that actions authorized by the BLM does not contribute to the need for the species to become listed as threatened or endangered by the US Fish and Wildlife Service (USFWS). (For additional information, refer to the BLM Special Status Species Management Manual 6840).

Special status species are defined as all State and Federally-listed threatened and

endangered species and other species given special attention by agencies. The latter includes candidate and species of concern identified by the USFWS. Both the lesser prairie-chicken and the sand dune lizard are candidate species for potential listing as either threatened or endangered.

The USFWS first determined the sand dune lizard was warranted for listing as threatened or endangered in 1982, but it was precluded from listing due to other priorities. The status of the sand dune lizard is reviewed annually by USFWS in a candidate notice of review (CNOR). In 1995, the USFWS received a petition to list the lesser prairie-chicken as a threatened or endangered species. The USFWS did not make a determination regarding the petition until 1998. At that time, the USFWS determined the lesser prairie-chicken was also warranted for listing as a threatened or endangered species, but also precluded it from listing. The status of the lesser prairie-chicken is also reviewed annually in a CNOR.

Historical activities have contributed to present status of both species. Therefore, BLM will amend its land use plans to provide better opportunities for the recovery of both species.

The planning process to update these plans was initiated on November 18, 2004, with the scoping phase, which included public meetings, and other activities to identify issues early in the analysis. The results of scoping are documented in the Scoping Report dated February 2005. An Analysis of the Management Situation (AMS) was prepared to compile available resource data and analyze the opportunities for management in the Planning Area. The AMS was finalized in January 2005.

Alternatives that were evaluated in the EIS were derived from the AMS analysis and the

issues and concerns that were identified throughout scoping and the planning process. Alternative and continuing management guidance are discussed in Chapter 2 of the RMPA/EIS. Chapter 3 provides a characterization of the existing environment. The impact assessment was conducted to evaluate the potential impacts that would result from each alternative, and cumulative impacts that also consider past, present, and reasonably foreseeable future actions. This analysis is provided in Chapter 4 of the EIS.

ALTERNATIVES

Six alternatives are considered in the RMPA/EIS. Under the No Action Alternative, management decisions and guidance would continue as directed by the current land use plans. Alternatives A, B, C, D and E provide a range of management options that maintain, protect or enhance special status species' habitat while allowing existing activities to continue in a modified manner. These are summarized in Chapter 2, Table 2-9.

BLM considered two alternatives that were not analyzed in detail. The first would have permitted petroleum leasing and subsequent development, livestock grazing and OHV use in the Planning Area without regard for the habitat needs of the lesser prairie-chicken and the sand dune lizard. Since this alternative would result in actions more detrimental to habitat protection than the No Action Alternative and likely speed the listing of either the lesser prairie-chicken or sand dune lizard as a threatened or endangered species, it was dropped from analysis.

The second alternative would have banned future development on existing oil and gas leases, and closed the Planning Area to livestock grazing. Holders of existing oil and gas leases have valid rights for the development of their leases. Banning future

development of those leases denies access to those leases which would likely lead to takings situations. Closing the Planning Area to livestock grazing in the absence of impact analysis on a site-specific allotment level would potentially violate National Environmental Policy Act (NEPA), and given the multiple-use mandate of the Federal Land Policy and Management Act (FLPMA) that identifies grazing as one of the principle or major uses of BLM land, is not within the scope of this RMPA. For these reasons, this alternative was dropped from analysis.

Also, geothermal and biomass energy generation were not included in any alternative in the Planning Area. The Planning Area has little potential for either category of alternative energy and, therefore, these categories were dropped from consideration.

The Alternatives that are considered and analyzed are detailed in Chapter 2 of the RMPA/EIS. The alternatives may be distinguished as follows:

- The No Action Alternative represents the continuation of existing management plans, policies, and decisions as established by the current RMPs.
- Alternative A adopts the portions of the Conservation Strategy that applies to public land and Federal minerals.
- Alternative B (BLM's preferred alternative) represents the Conservation Strategy and adds emphasis to sand dune lizard habitat and surface reclamation.
- Alternative C represents the continuation of Interim Management, originally put in place by BLM (August 2004) to preserve management options in the Planning Area.
- Alternative D focuses management efforts on preserving occupied habitat.
- Alternative E analyzes the impacts of an area of critical environmental concern (ACEC) nomination.

The major issues addressed in the alternatives include wildlife habitat, oil and gas development, livestock grazing, OHV use and designations, and ACECs. The alternatives identify several activities and strategies for wildlife habitat management while allowing for other uses of public land. Management prescriptions for cultural resources, paleontology, lands and realty, floodplains, recreation, soil, water, air, transportation, visual resources and fire management would remain unchanged by this amendment.

Alternatives A, B, C, D and E identify areas closed to new oil and gas leasing. The amount of area closed varies between alternatives but for all alternatives, the closures may end when the CNOR for both species indicate the threats to those species have been removed.

Under Alternatives A, B, C, D and E, adjustments in the management of grazing allotments would be accomplished under the "New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management" and applicable grazing regulations. Evaluations conducted in the watersheds of the Planning Area would indicate whether changes are warranted and, if so, changes needed to bring an area up to standard would be implemented the following year.

Alternatives A, B, C and D propose to change the OHV use designation in the Carlsbad Field Office portion of the Planning Area from "open" to "limited." All OHV use would be limited to existing routes. BLM would authorize or permit establishing any new routes.

BLM also proposes management changes in existing ACECs and the establishment of a new ACEC. Alternative E establishes the Lesser Prairie-Chicken ACEC on four separate tracts. This proposed ACEC also incorporates the Mescalero Sands ACEC.

Although there are varying degrees of wildlife habitat management proposed under each alternative, the most substantive changes in management occur under Alternative E. The alternative proposes a 5-year moratorium on all livestock grazing and oil and gas development within portions of the proposed ACEC.

Alternative A is the portion of the Conservation Strategy that applies to public land and Federal minerals in the Planning Area. (See Appendix 2.) This alternative establishes the concepts of Primary Population Area (PPA), Sparse and Scattered Population Area (SSPA), and Isolated Population Area (IPA) for the lesser prairie-chicken. This alternative has a Core Management Area (CMA) similar to the Lesser Prairie-Chicken Core Habitat Area established by the 1997 Roswell RMP. The CMA would be closed to new oil and gas leasing. Featured also are 17 Habitat Evaluation Areas within the IPA. New oil and gas leasing of any currently unleased Federal minerals within these areas would be deferred until the habitat within these areas can be evaluated. Depending on the results, unleased tracts would be either closed to new leasing or offered for lease.

Alternative B (BLM's preferred alternative) adopts the concepts of the Conservation Strategy in Alternative A and adds measures designed to provide greater protection of lesser prairie-chicken and sand dune lizard habitat, and elevate the importance of reclaiming surface disturbance. This alternative contains a larger CMA while using the concepts of PPA, SSPA, IPA and the 17 Habitat Evaluation Areas. New oil and gas leases outside the CMA, but within sand dune lizard habitat would require the lease to be surveyed for occupied habitat prior to authorization of lease development. For existing oil and gas leases within this habitat, a survey for occupied habitat would be required prior to authorization of further development. With survey results in hand,

BLM and the lease holder would work together to produce a plan of development.

The zone concepts of Interim Management (see Appendix 1) and other prescriptions make up Alternative C. Zone 1 would be closed to new oil and gas leasing. New oil and gas leasing would occur in Zone 2, but all new leases would have the "no surface occupancy" requirement. New oil and gas leasing in Zone 3 would require a plan of development prior to authorizing lease development. In Zone 4, all current management requirements authorized by existing land use plans would be applied. Regardless of the zone, no new oil and gas leasing would occur in the sand dune lizard habitat shown on Map C-1. Existing oil and gas leases in Zones 1, 2, and 3, would require an approved plan of development prior to approving the next application for permit to drill (APD).

Alternative D focuses on occupied habitat for both species. New oil and gas leasing or development restrictions would be applied only to occupied habitat.

Alternative E would apply the suggestions for special management from the Lesser Prairie-Chicken ACEC nomination (see Appendix 3) received by BLM in December 2002. The special management measures would apply a 5-year moratorium on all livestock grazing and all new oil and gas activities within the proposed ACEC south of US Highway 380 and the two small portions of the proposed ACEC straddling US Highway 70 (see Map E-1).

Additionally, no drilling allowed within 0.9 miles of an active lek within the proposed ACEC; and no new rights-of-way granted within 0.9 miles of an active lek within the proposed ACEC.

This RMPA/EIS does not address the effects of specific actions that may occur over the planning period. More specific mitigation measures or additional National Environmental Policy Act (NEPA) analysis

may be required for some future proposed uses and actions, and would be determined on a case-by-case basis in accordance with the management framework provided in this RMPA.

AFFECTED ENVIRONMENT

To document the existing conditions in the Planning Area and establish a baseline for evaluating potential impacts, the current resources and land uses and their conditions are described in Chapter 3. Most information was gathered from existing data maintained by the BLM. The discussion is organized by resource and resource use, and related issues, and includes the following sections:

- Lands and Realty
- Fluid Minerals
- Solid Minerals
- Alternative Energy
- Soil and Water Resources
- Floodplains
- Air Quality
- Vegetation
- Livestock Grazing
- Wildlife, including Special Status Species
- Fire Management
- Hazardous Materials
- Cultural Resources
- Paleontological Resources
- Recreation, including Off-Highway Vehicle Use
- Visual Resources
- Special Management Areas
- Environmental Justice
- Best Management Practices
- Social and Economic Conditions

ENVIRONMENTAL CONSEQUENCES

The predicted consequences, or potential effects, on the environment of implementing the alternatives were identified by

alternative. Effects analysis is based on current and projected uses in the Planning Area. The results of this analysis are presented in Chapter 4. A summary of potential impacts, by resource and alternative, is provided in Table S-1.

Alternative B is BLM's preferred alternative, and provides management decisions that, relative to the No Action Alternative, are expected to improve resource conditions.

Cumulative effects are the effects that result from incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (Federal or non-Federal) or person undertakes such other actions. Overall, past and present actions in the Planning Area have contributed to a situation in which the USFWS has determined the lesser prairie-chicken and sand dune lizard are warranted for listing as threatened or endangered species but precluded by other priorities.

Due to BLM's adoption of the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management, the mitigation of potential cumulative impacts to watersheds, vegetation, soils, and other resources that could result from grazing should be well integrated throughout the Planning Area. These range management strategies are currently consistent with the research on arid grasslands ecological science and would be adapted to future research and the condition of the Planning Area as appropriate to maintain conformity to BLM policy and regulations. In addition, implementation of the Standards and Guidelines would mitigate potential impacts to resources that may result from the construction of facilities associated with land use authorizations, right-of-way grants, recreation, or other activities.

Also, BLM developed a suite of best management practices, which are designed to minimize surface disturbance and effects on resources, and retain the reclamation

potential of disturbed areas. The practices represent effective and practical means of accomplishing the management goals and objectives of the BLM and should be used as a guide when preparing plans for individual projects.

CONSULTATION AND COORDINATION

The analysis for this RMPA/EIS was completed in consultation with other agencies, State and local governments, and the public. These activities and participants are discussed in Chapter 5 of the RMPA/EIS. Consultation was initiated with the USFWS, and a Biological Assessment has been completed (see Appendix 10 of this RMPA). The NMDGF, New Mexico Department of Agriculture, New Mexico State Land Office, Chaves County, Eddy County, and Lea County are cooperating agencies in the preparation of this RMPA/EIS. Roosevelt County also has been contacted regarding this RMPA/EIS. BLM contacted the Mescalero Apache Tribe, Apache Tribe of Oklahoma, Comanche Tribe, Kiowa Tribe, and Ysleta del Sur Pueblo to inform them of the planning effort, request the identification of traditional cultural places and resources that should be considered, and invite them to participate in the preparation of the RMPA/EIS.

On October 20, 2006, BLM released the Draft RMPA/EIS for a 90-day public review period which closed on January 18, 2007. Concurrent with the distribution of the Draft RMPA/EIS, a BLM Notice of Availability was published in the *Federal Register* along with the U.S. Environmental Protection Agency's Notice of Availability.

BLM hosted five formal public open houses during the 90-day review in an effort to gather public comment and answer questions regarding the Draft RMPA/EIS. During the public meetings, BLM staff recorded five oral comments. BLM received

13 comment letters during the 90-day review period.

All written and oral comments received during the 90-day period were compiled, analyzed, and summarized. The Proposed RMPA/Final EIS (RMPA/FEIS) was prepared and provides responses to the comments received on the Draft RMPA/EIS in Appendix 11. The PRMPA/FEIS contains additional information to support the responses to the comments.

Following the publication of a Notice of Availability in the *Federal Register*,

distribution of the RMPA/FEIS, a 60-day Governor's Consistency Review, and a 30-day protest period, the BLM will issue a Record of Decision summarizing the findings and decisions regarding the preferred alternative and its determination regarding compliance with NEPA and other regulations. Also, the RMPA will be prepared to document the resource management decisions and complete the BLM's resource management planning process for the Special Status Species RMPA.

COMPARISON OF IMPACTS

TABLE S-1A LANDS & REALTY

IMPACTS OF/TO:	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Public Land Identified for Disposal	Impacts are the same as those analyzed in 1997 Roswell Proposed RMP/Final EIS	Same as No Action except 3,151 acres of public land no longer suitable for disposal	Same as Alternative A	Same as No Action	Same as No Action	Same as No Action
Definitions of Right-of-Way Avoidance/ Exclusion Area	Updates definition & Field Offices manage in same manner	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Right-of-Way Exclusion Areas	Impacts are the same as those analyzed in 1997 Roswell Proposed RMP/Final EIS	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Right-of-Way Avoidance Areas	Impacts are the same as those analyzed in 1997 Roswell Proposed RMP/Final EIS & the 1988 Carlsbad RMP	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Rights-of-Way	Impacts are the same as those analyzed in 1997 Roswell Proposed RMP/Final EIS & the 1988 Carlsbad RMP	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Additional impacts from setbacks would be the same as those described for avoidance or exclusion areas, with delays in construction, increases in distance from realignments & increased construction costs
Priority on Exchanges with State Land Office (SLO)	No impacts	Focuses exchange efforts with SLO	Same as Alternative A	Same as No Action	Same as No Action	Same as No Action
Potential Acquisitions	Impacts are the same as those analyzed in 1997 Roswell Proposed RMP/Final EIS	No additional impacts from considering and implementing acquisitions from willing sellers	Same as Alternative A	Same as No Action	Same as No Action	Same as No Action
Lands acquired for special status species habitat	Impacts are the same as those analyzed in 1997 Roswell Proposed RMP/Final EIS	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Interstate Utility Corridors	Corridors for major utilities identified to avoid or minimize impacts within the Planning Area	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Electric Power Lines	Analyzed as part of RFD. No provisions for removing idle lines	Same as No Action	PLRC program would result in removal of idle lines within the Planning Area	Same as No Action	Same as No Action	Same as No Action

COMPARISON OF IMPACTS

TABLE S-1B MINERALS

IMPACTS OF/TO:	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Areas Closed to New Oil & Gas Leasing	11,173 acres Federal minerals	209,106 acres Federal minerals	22,456 acres Federal minerals	221,195 acres Federal minerals	120,851 acres Federal minerals	110,341 acres Federal minerals
NSO Applied to New Oil & Gas Development	7,066 acres Federal minerals	23,639 acres Federal minerals	23,639 acres Federal minerals	8,000 acres Federal minerals	10,000 acres Federal minerals	6,451 acres Federal minerals
Open to leasing with Lesser Prairie Chicken Timing & Noise Requirements	287,000 acres Federal minerals	95,193 acres Federal minerals	79,863 acres Federal minerals	58,403 acres Federal minerals	126,748 acres Federal minerals	203,185 acres Federal minerals
Open to New Leasing	1,134,150 acres Federal minerals	936,217 acres Federal minerals	923,867 acres Federal minerals	924,128 acres Federal minerals	1,024,472 acres Federal minerals	126,890 acres Federal minerals
5-Year Moratorium on all oil & Gas Activity	Not required; no impacts	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Congressional action needed to implement; 584 leases affected
Projected Annual Activity	61 wells drilled, 12 wells plugged & abandoned	51 wells drilled, 11 wells plugged & abandoned	49 wells drilled, 11 wells plugged & abandoned	49 wells drilled, 11 wells plugged & abandoned	54 wells drilled, 11 wells plugged & abandoned	32 wells drilled, 12 wells plugged & abandoned
Plan of Development (POD)	Not required; no impacts	Additional planning & development costs	Same as Alternative A	Same as Alternative A	Same as Alternative A	Same as No Action
Disposal of Mineral Materials	No additional impacts	Increased development costs	Same as Alternative A	Same as No Action	Same as No Action	Same as Alternative A
Sand Dune Lizard Protection	No additional impacts					

COMPARISON OF IMPACTS

TABLE S-1C ALTERNATIVE ENERGY, SOILS, WATER, AIR, INVASIVE SPECIES, FIRE MANAGEMENT, HAZARDOUS MATERIALS, CULTURAL RESOURCES, PALEONTOLOGICAL RESOURCES AND VISUAL RESOURCES

IMPACTS OF/TO:	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Alternative Energy	Large areas of surface disturbance & habitat fragmentation	Same as No Action	Reduced impacts since solar or wind energy sites would be located in places with no negative impacts to occupied & suitable chicken/lizard habitat	Same as No Action	Reduced impacts since solar or wind energy sites would be located in places with no negative impacts to occupied chicken/lizard habitat	Same as No Action
Soils	Current impacts would continue	18% less direct impacts to soils than No Action	20% less direct impacts to soils than No Action	Same as Alternative B	6% less direct impacts to soils than No Action	87% less direct impacts to soils than No Action
Water Resources	Current impacts would continue	18% less indirect impacts to water than No Action	20% less indirect impacts to water than No Action	Same as Alternative B	6% less indirect impacts to water than No Action	87% less indirect impacts to water than No Action
Floodplains	Current impacts would continue	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Air Quality	Current impacts would continue	18% less indirect impacts to air quality than No Action	20% less indirect impacts to air quality than No Action	Same as Alternative B	6% less indirect impacts to air quality than No Action	87% less indirect impacts to air quality than No Action
Non Native & Invasive Species	No additional impacts	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Fire Management	No additional impacts	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Hazardous Materials	No additional impacts	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Cultural Resources	Current impacts would continue	18% less indirect impacts to cultural resources than No Action	20% less indirect impacts to cultural resources than No Action	Same as Alternative B	6% less indirect impacts to cultural resources than No Action	87% less indirect impacts to cultural resources than No Action
Paleontological Resources	Current impacts would continue	18% less indirect impacts to paleontological resources than No Action	20% less indirect impacts to paleontological resources than No Action	Same as Alternative B	6% less indirect impacts to paleontological resources than No Action	87% less indirect impacts to paleontological resources than No Action
Visual Resources	No additional impacts	18% less indirect impacts to visual resources than No Action	20% less indirect impacts to visual resources than No Action	Same as Alternative B	6% less indirect impacts to visual resources than No Action	87% less indirect impacts to visual resources than No Action

COMPARISON OF IMPACTS

TABLE S-1D VEGETATION

IMPACTS OF/TO:	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Standards for Public Land Health & Guidelines for Livestock Grazing	No additional impacts to those described in the 2001 NM Standard for Public Land Health & Guidelines for Livestock Grazing	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Brush Control	Impacts are the same as those described in existing planning documents	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Roswell Field Office 5-year Wait for Adjacent Chemical Treatments	Management flexibility & responsiveness constrained	Management flexibility & responsiveness improved	Same as Alternative A	Same as No Action	Same as Alternative A	Same as No Action
Mesquite Treatment	Impacts are the same as those described in existing planning documents	Focuses on improving lesser prairie-chicken habitat	Same as Alternative A	Same as No Action	Same as Alternative A	Same as No Action
Shinnery-Oak Treatment	Impacts are the same as those described in existing planning documents	Focuses on improving lesser prairie-chicken habitat	Same as Alternative A	Same as No Action	Same as Alternative A	None
Desired Plant Community	Field Offices continue to use related but separate descriptions	Same as No Action	Planning Area uses common descriptions	Same as Alternative B	Same Alternative B	Same as No Action
Rest After Treatment	Impacts are the same as those described in existing planning documents	Same as No Action	Increased rest available depending on vegetation responses & precipitation	Same as No Action	Same as Alternative A	No impacts in Proposed ACEC, same as No Action outside proposed ACEC boundaries
Sand Dune Lizard Habitat	Impacts are the same as those described in existing planning documents	Sand dune lizard habitat & corridors left out of treated areas	Same As Alternative A	Same as No Action	Same as Alternative A	Same as No Action
Tebuthiuron Ban	None – No impacts	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Use banned in the adaptive management portion of the proposed ACEC

COMPARISON OF IMPACTS

TABLE S-1E LIVESTOCK MANAGEMENT

IMPACTS OF/TO:	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Standards for Public Land Health & Guidelines for Livestock Grazing	No additional impacts to those described in the 2001 NM Standard for Public Land Health & Guidelines for Livestock Grazing	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
5-year Moratorium on Livestock Grazing	No impacts; not required	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Approximately 20 operators would go out of business
Use Authorization	Currently 192,125 AUMs on 114 allotments	Same as No Action	Same as No Action	Same as No Action	Same as No Action	155,615 AUMs on 114 allotments
Changes in Numbers	No additional impacts to those described in the 2001 NM Standard for Public Land Health & Guidelines for Livestock Grazing	Same as No Action	Same as No Action	Same as No Action	If an entity who acquires grazing preference desires to not graze the associated allotment, BLM will enter into written agreement with them to approve their application to place forage in temporary nonuse for enhancement of rangeland resources.	5-year moratorium will make existing forage on 32 allotments in portions of the proposed ACEC unavailable for livestock use for 5 years. In the remainder of the proposed ACEC, (the Adaptive Management Area) experimental reductions in livestock use authorization would be made.
Range Improvements	No additional impacts to those described in the 2001 NM Standard for Public Land Health & Guidelines for Livestock Grazing	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Voluntary Relinquishment of Grazing	Not analyzed – no impacts	As analyzed in the 2001 NM Standard for Public Land Health & Guidelines for Livestock Grazing, up to 5 operators would choose this option	Same as Alternative A	Same as No Action	Same as No Action	Same as No Action
Participation in Conservation Programs	Allotment holders neither encouraged nor discouraged from participating – no impacts	Allotment holders are encouraged to participate in conservation programs that are consistent with the seasonal nesting and brood-rearing habitat requirements for lesser prairie-chicken – no impacts.	Same as Alternative A	Same as No Action	Same as No Action	Same as No Action

COMPARISON OF IMPACTS

TABLE S-1F WILDLIFE*

IMPACTS OF/TO:	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Lesser Prairie-Chicken Habitat & Sand Dune Lizard Habitat	Same as those described in existing planning documents	Provides more habitat protection for both lesser prairie-chicken and sand dune lizard habitat than No Action Alternative. Specific measures taken to protect chicken habitat would benefit lizard habitat where their habitats coincide.	Provides more habitat protection for both lesser prairie-chicken and sand dune lizard habitat than Alternative A.	Zones 1 and 2 provides approximately the same level of habitat protection for both species habitat as the CMA and PPA of Alternatives A and B. Zones 3 and 4 provides less habitat protection than the SSPA and IPA of Alternatives A and B. Management flexibility is reduced from either Alternative A or Alternative B.	Provides the amount of habitat protection for both species similar to No Action. This alternative does not allow for the expansion of habitats or species populations within the entire Planning Area.	Focuses management only on prairie-chicken; ignores all other special status species. Provides no management recommendations or guidance for occupied habitat occurring outside the boundaries of the proposed ACEC. Impacts on portions outside proposed ACEC boundaries would be the same as No Action. Neither mentions nor provides for expansion of the species habitat or populations outside the boundaries of the proposed ACEC.
Playas & Alkali Lakes	Same as described in existing planning documents	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Predator Control	Same as described in existing planning documents - 1997 Roswell RMP sets up conditions & protocol for predator control	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Recovery Plans	Same as described in existing planning documents - Plans for Federally-listed species would be implemented, including reintroduction of native species in coordination & cooperation of local governments	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Fence Enclosures	Same as described in existing planning documents	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Habitat Management Plans	Same as described in existing planning documents	Existing HMPs would be modified & completed with public participation & NEPA process.	Same as Alternative A	Same as Alternative A	Same as No Action	Same as Alternative A

COMPARISON OF IMPACTS

TABLE S-1G RECREATION

IMPACTS OF/TO:	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Special Recreation Management Areas (SRMAs)	Impacts are the same as those described in existing planning documents	Same as No Action	Adds a proposed recreation area as an SRMA	Same as No Action	Same as No Action	Same as No Action
Recreation Permits for Lesser Prairie-chicken Watching	Not required – no impacts	Same as No Action	If visitor monitoring produces data showing recreation is negatively impacting special status species, management actions may include the issuance of Special Recreation Permits as a management corrective action to protect the species.	Same as No Action	Same as No Action	Access to proposed ACEC for recreation by permit only
Timing & Noise Restrictions	Not required – no impacts	Same as No Action	Time and noise restrictions would be in effect from 3 am to 9 am March 1 through June 15.	Same as No Action	Same as No Action	Same as No Action
Recreation Opportunity Spectrum	Impacts are the same as those described in existing planning documents	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action

COMPARISON OF IMPACTS

TABLE S-9H OFF-HIGHWAY VEHICLE MANAGEMENT

IMPACTS OF/TO:	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Open to OHV Use	No changes - Impacts are the same as those described in existing planning documents – 586,000 acres	Mescalero Sands North Dune OHV Area & Hackberry Lake OHV Area – 0 acres	Mescalero Sands North Dunes OHV Area and the dunes of the Shugart would be designated as open – 1,000 acres	Same as No Action	Same as No Action	Same as No Action
Limited to Existing Roads & Trails	No changes - Impacts are the same as those described in existing planning documents – 258,000 acres	The Planning Area excluding open designated areas would be limited to existing roads and trails pending completion of route designation plans – 844,000 acres	The Planning Area excluding open designated areas would be limited to existing roads and trails pending completion of route designation plans – 843,000 acres	Same as No Action	Same as No Action	Same as No Action
Closed to OHV Use	Mescalero Sands ACEC, Mather's RNA, Mescalero Sands ONA, and Archeological Districts – 4,000 acres	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Designated Roads & Trails	Transportation planning with route designation plan pending in Roswell Field Office portion of Planning Area. No such pending in Carlsbad Field Office portion	Transportation planning with route designation plan pending in entire Planning Area.	Transportation planning with route designation plan pending in entire Planning Area.	Same as Alternative A	Same as No Action	Transportation planning with route designation plan pending in the proposed ACEC. Outside the proposed ACEC, same as No Action.
Seasonal Use of Established OHV Areas	Not proposed – no impacts	Same as No Action	Time and noise restrictions from 3 am to 9 am March 1 through June 15.	Same as No Action	Same as Alternative B	Same as No Action
Mescalero Sands North Dune OHV Area	Impacts are the same as those described in existing planning documents	No expansion – no impacts	Expanded from 562 acres to 1,674 acres in a controlled three-phase plan.	Same as Alternative A	Only phase one of the proposed three-phase expansion would occur	Same as No Action
Hackberry Lake Intensive ORV Area	Impacts are the same as those described in existing planning documents	Same as No Action	Designating roads and trails for OHV use in the Shugart Dunes would reduce habitat fragmentation by eliminating some roads and trails.	Same as Alternative A	Same as No Action	Same as No Action
Proposed Square Lake OHV Area	Not proposed – no impacts	Same as No Action	Provides management in an area historically used by OHV riders & establishes if there are conflicts with chicken/lizard habitat protection.	Same as No Action	Same as No Action	Same as No Action

COMPARISON OF IMPACTS

TABLE S-1I SPECIAL MANAGEMENT AREAS

IMPACTS OF/TO:	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Areas of Critical Environmental Concern (ACECs)	No change - Impacts are the same as those described in existing planning documents	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Establishes the Lesser Prairie-Chicken ACEC – impacts analyzed in other Resources
Special Management Areas	No change - Impacts are the same as those described in existing planning documents	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action

TABLE S-1J SUMMARY OF CUMULATIVE IMPACTS

NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Impacts were documented in the 1997 Proposed Roswell RMP/Final EIS – Proposed Carlsbad RMPA/Final EIS	Provides more habitat protection for both species habitat than occurs in No Action Alternative by closing areas to new leasing	Provides more protection for both species habitat than Alternative A	Zones 1 & 2 of would provide approximately the same level of habitat protection for both species as the CMA & PPA of Alternatives A and B. Zones 3 & 4 would provide less habitat protection than the SSPA & IPA of Alternatives A & B	Same as No Action	Less habitat protected from surface disturbing activities as compared to other alternatives. No management suggestions or guidance for occupied habitat occurring outside the boundaries of the proposed ACEC.
Social & economic conditions described in Chapter 3	Economic effects would be readily absorbed by the local economy & would not be noticeable to the general population. Individuals & companies would be directly affected.	Same as Alternative A	Same as Alternative A	Same as No Action	Would produce the largest degree of impacts within the ACEC & the surrounding to the local economy.
Cumulative impacts described in the 2001 New Mexico Standards for Public Land Health & Guidelines for Livestock Grazing	Long-term impacts of implementing Standards for Rangeland Health would be a positive benefit to livestock operators. Short-term impacts would be expected to be localized to certain allotments or pastures & would not occur throughout the Planning Area.	Same as Alternative A	Same as Alternative A	Same as No Action	Same as Alternative A
High likelihood that either the lesser prairie-chicken or the sand dune lizard could be listed as T&E species	Likelihood of listing either species would be reduced from No Action Alternative.	Likelihood of listing either species would be reduced from Alternative A.	Likelihood of listing either species would be reduced from No Action Alternative.	Same as No Action	Proposed ACEC would not provide opportunities for expansion of the species (population numbers & occupied habitat) would be necessary to avoid listing both species as T&E species. Listing either species as T&E more likely than Alternatives A, B or C.
		Greater emphasis on sand dune lizard habitat & reclamation than Alternative A would yield greater results both in habitat protection & vegetation recovery.	Management flexibility is reduced from either Alternative A or Alternative B, reducing the ability to respond to changing conditions as well as a corresponding reduction in opportunities to apply adaptive management.	Same as No Action	Proposed ACEC would not meet BLM planning guidance for management of ecosystems on a landscape scale. Instead, the proposed ACEC focuses management on one species, ignoring all other special status species occupying the same ecosystem.

1 - Introduction



CHAPTER 1

INTRODUCTION

This document consists of a land resource management plan amendment (RMPA) and an environmental impact statement (EIS) analyzing the effects of proposed management actions and alternatives for the Planning Area in southeastern New Mexico on public land and mineral estate managed by the Carlsbad and Roswell Field Offices (see Map 1-1). The EIS has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (40 CFR 1500).

PURPOSE AND NEED FOR THE PLAN

The purpose of the Special Status Species Proposed Resource Management Plan Amendment/Final Environmental Impact Statement (PRMPA/FEIS) is to propose specific management prescriptions to ensure the continued habitat protection of two special status species, the lesser prairie-chicken (*Tympanuchus pallidicinctus*) and the sand dune lizard (*Sceloporus arenicolus*), while allowing other resource uses and activities to continue within the Planning Area. The Planning Area includes public land surface and Federal mineral estate on portions of the Carlsbad and Roswell Field Offices (see the Planning Area on the included maps). In order to protect the habitat for these two species, the FEIS evaluates the potential effects of different management prescriptions on resources and resource uses within the Planning Area, including, for example: oil and gas leasing and the subsequent development of oil and gas leases through the reclamation phase; livestock grazing; designation of interstate utility corridors; water resources; cultural resources; and off-highway vehicle (OHV) use designations. The PRMPA/FEIS and Final Record of Decision would result in amending two existing BLM RMPs:

- The 1988 Carlsbad Resource Management Plan (RMP), including its 1997 Amendment for Oil and Gas; and
- The 1997 Roswell RMP.

Three factors are driving the need for amending these two RMPs: Federal regulations and policies that address special status species and public land use planning and management; related changing resource demands and conditions that may affect the special status species' habitat in the Planning Area; and a focus on expanding interagency coordination through the land use planning implementation process. Federal regulations and policies require the BLM to make its public land and resources available based on the principle of multiple-use. At the same time, it is BLM policy to conserve special status species and their habitats, and ensure that actions authorized by the BLM does not contribute to the need for the species to become listed as threatened or endangered by the US Fish and Wildlife Service (USFWS). (For additional information, refer to the BLM Special Status Species Management Manual 6840).

Special status species are defined as all State and Federally-listed threatened and endangered species and other species given special attention by agencies. The latter includes candidate and species of concern identified by the USFWS. Both the lesser prairie-chicken and the sand dune lizard are candidate species for potential listing as either threatened or endangered. The USFWS first determined the sand dune lizard was warranted for listing as threatened or endangered in 1982, but it was precluded from listing due to other priorities. The status of the sand dune lizard is reviewed annually by USFWS in a

candidate notice of review (CNOR). In 1995, the USFWS received a petition to list the lesser prairie-chicken as a threatened or endangered species. The USFWS did not make a determination regarding the petition until 1998. At that time, the USFWS determined the lesser prairie-chicken was also warranted for listing as a threatened or endangered species, but also precluded it from listing. The status of the lesser prairie-chicken is also reviewed annually in a CNOR.

Habitat for these two species can be affected by existing authorized activities on public land, including Federal minerals lease development, livestock grazing, and recreation, and particularly OHV use. Whether singular or in combination, these existing uses of public land can result in habitat fragmentation, surface disturbance, and disruption of the life cycles of the lesser prairie chicken and sand dune lizard. In order to ensure that the two species will not become listed, existing management prescriptions and actions need to be modified.

Given the complex relationship among the special status species and their habitats, the increasing numbers of species listed over the past several years, and the possibility of more species becoming listed, the scope of this Proposed RMP/FEIS has been broadened to an ecosystem or landscape level. An ecosystem approach provides a strategy to help arrest the decline of biodiversity, and eliminate or minimize the need for further listings of species.

The need for coordinating interagency planning and land use plan implementation actions is closely linked with the ecosystem approach. Species and habitats cross jurisdictional boundaries of different Federal and State government agencies. Therefore, another outcome of this land use planning effort is to continue improving interagency coordination for protecting the species and habitats, and consequently, help maintain biodiversity. Cooperating agencies include

the New Mexico State Land Office, the New Mexico Department of Agriculture, the New Mexico Department of Game and Fish, Chaves County, Eddy County and Lea County. Several non-governmental interests have been involved as well.

The FEIS analyzes six alternatives: No Action – Current Management and Alternatives A through E. The array of alternatives provide habitat protection, while taking into account factors involving the local economy, such as allowing the continued production of oil and gas on public resources. Wildlife habitat and Federal minerals are often in conflict and such is the case in southeast New Mexico. At the same time, petroleum exploration and development has a history in the area of over 50 years, and is an important component of domestic energy production.

PLANNING AREA

The Planning Area amounts to about 2 percent of New Mexico and is located in the southeastern part of the State (Map 1-1). The Planning Area comprises 1,852,946 acres of private, Federal and State trust lands (see Table 1-1).

This RMPA and the decisions it contains apply only to public land and Federal minerals. This amendment is not a habitat conservation plan (HCP) covering private land. Private land may be indirectly affected, however, through nexus with Federal land and from land acquisition/disposal initiatives. Conversely, over a multi-year period, some land uses proposed for private land adjacent to public land could have significant effects on public land and may reduce the effectiveness of public land management.

SCOPING

Four formal scoping meetings were held. Although the general public was invited to the scoping meetings, attendees were

TABLE 1-1 LAND OWNERSHIP IN THE PLANNING AREA		
Ownership	Acres	Percent of Planning Area
Public Land (managed by BLM)	847,491	45.7
Department of Energy	10,244	0.7
State Trust Land	309,129	16.6
Private Land	686,082	37.0
TOTAL PLANNING AREA	1,852,946	100.0
FEDERAL MINERAL ESTATE		
Surface & Subsurface Ownership	Acres	
BLM-Managed Surface & Subsurface	847,491	
Other Surface Owners, Federal Minerals	297,832	
TOTAL	1,145,323	
Source: Pecos District Office Files, 2006.		

affiliated with either the livestock industry or the petroleum industry. Five information stations (Livestock Grazing, Oil & Gas Development, off-highway vehicle (OHV) use, Planning Process, and Wildlife & Special Status Species) were set up at every meeting and comments captured by BLM staff on flip charts. A total of 37 individuals attended the four meetings with some individuals attending more than one meeting. Dates and locations of these meetings are found in Table 1-2.

The formal scoping meetings produced concerns about the effects of the RMPA on ranch operations (utilization levels, seasonal grazing for either entire ranches or individual pastures). Questions about brush control were voiced at every meeting.

General concerns about the adequacy of any BLM analysis of economic impacts were expressed. At the time of the scoping meeting there was no information provided about the reason for these concerns.

Several speakers mentioned the maximization of resource production; however, it was unclear if the speakers were talking about maximum production of one resource or a balance between resources for maximum total production. There also seemed to be a general

sentiment to continue existing management in the Carlsbad Field Office portion of the Planning Area since some speakers had the perception "there are no birds there."

BLM received a total of 10 letters, comment forms and e-mail during the scoping period, 5 of which were concerned with OHV use. A few comments captured at the public meetings were repeated in the written comments. The comments regarding OHV use were from those people who were concerned with the elimination of the Mescalero Sands North Dune OHV Area and advocated the proposed 900-acre expansion of the area as proposed in the 1997 Roswell RMP. The OHV comments urged BLM to inventory for lesser prairie-chicken and sand dune lizard as well as conducting an inventory for possible additional OHV areas within the Planning Area.

Two comments dealt with BLM's relationship with the US Fish and Wildlife Service (USFWS). One comment expressed concern the USFWS is unaware of current projects and management practices in southeast New Mexico. The second comment advocated formal agreements between BLM and USFWS as a measure to reduce the risk of listing species as threatened or endangered.

TABLE 1-2 PUBLIC SCOPING MEETING ATTENDANCE		
MEETING DATE	MEETING LOCATION	NUMBER IN ATTENDANCE*
January 11, 2005	Student Union, Eastern New Mexico University, Portales, NM	2
January 13, 2005	Roswell Field Office, Roswell, NM	15
January 18, 2005	Pecos Village Conference Center, Carlsbad, NM	19
January 20, 2005	Hobbs Public Library, Hobbs, NM	9
ECONOMIC PROFILE SYSTEM WORKSHOPS		
February 9, 2005	Roswell Convention & Civic Center, Roswell, NM	8
February 10, 2005	Pecos Village Conference Center, Carlsbad, NM	17
SOURCE: Pecos District Office Planning Files, 2006		
NOTE: *Members of the public, not BLM staff.		

The Economic Profile System (EPS), developed by the Sonoran Institute for BLM, serves as the baseline of the social and economic condition of the Planning Area. BLM hosted two workshops as part of the scoping process to learn how EPS works and to gather input from the public. A total of 42 people (BLM staff and members of the public) attended the workshops. At the end of the workshops, three questions were asked:

- What are the area's most significant economic assets?
- What is your vision of economic success for the area?
- How can public lands assist with this vision of success?

Responses to these questions, particularly the last, echoed many of the comments previously received. Livestock grazing and petroleum development on public land are important to the economy of southeast New Mexico yet the share of total employment and personal income generated by these industries has declined over the past 30 years. Services of all types have generated the most new jobs in the area during the same time period. Surprisingly, sources of non-labor income (dividends, interest, rent, annuities) are the largest category (37 percent) for personal income.

NATIVE AMERICAN CONSULTATION

During the scoping period, BLM contacted the Ysleta del Sur Pueblo, the Mescalero Apache Tribe, the Apache Tribe of Oklahoma, the Comanche Tribe and the Kiowa Tribe, asking if there were any management plans approved or adopted by the tribes that this RMPA/EIS would affect. These contacts were made between November 2004 and March 2005 via mail and telephone.

Comments, oral or written, received by BLM become part of the public record for the Special Status Species RMPA. As such, these comments are available for public review at the Pecos District Office.

ISSUES

Based on the results of the scoping meetings, the following planning issues were developed:

Issue - How should Lesser Prairie-chicken and Sand Dune Lizard habitats be managed to ensure the survival of the two species?

How should other public land uses such as oil and gas development, livestock grazing, off-highway vehicles be managed to protect the habitats?

What areas should be declared open, closed, or open with stipulations for Oil & Gas exploration and developments?

Issue - What areas should be designated open, closed, or limited to OHVs and how should these areas be managed?

PLANNING CRITERIA/LEGISLATIVE CONSTRAINTS

Planning criteria are the rules and other factors used to form judgments about data collection, analysis, and decision making during planning. Planning criteria for the RMPA include all applicable Federal laws, regulations, executive orders, policies, and applicable portions of existing land use plans, which the cooperating agencies are required to follow. For this RMPA, the planning criteria are:

A. Actions must comply with laws, regulations, executive orders, and BLM Manuals (i.e., supplemental program guidance).

B. Actions must be reasonable and achievable and allow for flexibility where appropriate (i.e. adaptive management).

C. In accordance with BLM Washington Office Instruction Memorandum 2003-169, the Economic Profile System (EPS) will be used as a source of demographic and economic data for the planning process. EPS will provide a foundation of current social and economic conditions in the Planning Area. Following this, as planning alternatives are developed, a social and economic analysis and environmental justice assessment will be conducted to determine the effect that each will have on users and the diverse population in the Planning Area. The analysis will consider the short- and long-term social and economic benefits associated with possible alternatives. Other important

factors to be considered will be the needs and long-term plans of local city, county, and tribal governments. Short-term consequences will be weighed against long-term benefits as necessary. The impacts on both the general population and affected sub-groups within the Planning Area will be determined.

D. Actions will be considered in an interdisciplinary approach.

E. The Roswell/Carlsbad RMPA planning team will work cooperatively with county and municipal governments, other Federal, State and local agencies, and interested groups and individuals. A process of collaborative public involvement and participation will be carried out throughout this process.

F. The amendment will change or modify the guidance upon which the Field Offices will manage public land within the Planning Area.

G. The planning process will include an EIS that complies with NEPA standards.

H. The amendment will cause the protection and enhancement of the biodiversity within the Planning Area, while allowing the public the opportunity for access to public land in a productive and meaningful way.

I. The amendment will recognize valid existing rights related to the use of public land. The RMPA will define the process that BLM will use to address applications or notices filed after the completion of the RMPA for land use authorizations.

J. The RMPA process will allow involvement of Native American tribal governments, and will provide strategies for protection of cultural resources and traditional cultural properties on public land.

K. Decisions in the RMPA will strive to be compatible with existing plans and policies of adjacent local, State, and Federal governments and agencies, as long as the decisions are in conformance with BLM management policies.

L. This plan amendment, like all plans, will be evaluated every 5 years, and based on the evaluation, revised or updated as needed. For analysis purposes, the short-term is defined as any time period less than 10 years, and the long-term is defined as any time period longer than 10 years.

RELATIONSHIP TO BLM POLICIES, PLANS, AND PROGRAMS

The RMPA is intended to provide broad management direction and to work in concert with any existing activity plans such as the Strategy for OHV Use, New Mexico Road Policy, and New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management. Site-specific projects may require additional public participation and NEPA processes.

Since the Roswell RMP and the Carlsbad RMPA were completed in 1997, New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management were approved. Also, the New Mexico BLM State Office completed the statewide Fire and Fuels Management Plan Amendment and EA. Both statewide plan amended all New Mexico BLM RMPs or RMPAs.

The 2005 National Wind Energy Development Programmatic EIS evaluated the potential impacts associated with the proposed action to develop a Wind Energy Development Program, including the adoption of policies and best management practices (BMPs). This Programmatic EIS

amends BLM land use plans (including the Carlsbad and the Roswell RMPs) to address wind energy development.

In order to comply with Section 368 of the Energy Policy Act of 2005, the Pecos District would designate utility corridors for major interstate projects. The Pecos District has participated in the development of the West-wide Energy Corridor Programmatic EIS. Corridors analyzed in this EIS include those that will be analyzed in the programmatic EIS.

PLANNING PROCESS

The planning process for this EIS began in November 2004 and has followed these steps:

- Public scoping
- Alternative formulation
- Impact analysis
- Selection of Preferred Alternative
- Draft RMPA/EIS
- Proposed RMPA/Final EIS

Still to come are the following steps:

- Approved RMPA/Record of Decision
- Implement, Monitor and Evaluate Results

The public has had formal and informal methods of participation in the development of the Draft RMPA/EIS and had more opportunities during the 90-day comment period.

The release of the Proposed RMPA/Final EIS begins a 30-day protest period. Evaluation, resolution and responses to protests and concerns would be resolved promptly. Approval of the RMPA and the Record of Decision would occur after resolution of protests and concerns. Copies of the Approved RMPA and the signed Record of Decision would be available to the public.

2 - Alternatives



CHAPTER 2

ALTERNATIVES

Six alternatives are considered in this Resource Management Plan Amendment (RMPA) and Environmental Impact Statement (EIS). Under the No Action Alternative, management decisions and guidance would continue as directed by the current land use plans. Alternatives A, B, C, D, and E provide a range of management options that maintain, protect or enhance special status species' habitat while allowing existing activities to continue in a modified manner. These are summarized in Table 2-13.

The No Action Alternative is current management as prescribed in the current land use plans (1988 Carlsbad RMP, as amended, and the 1997 Roswell RMP, as amended). This alternative serves as the baseline to which other alternatives are compared.

Alternative A is the portion of the Conservation Strategy that applies to public land and Federal minerals in the Planning Area. (See Appendix 2 and Map A-1.) BLM participated in developing the Strategy. This alternative establishes the concepts of Primary Population Area (PPA), Sparse & Scattered Population Area (SSPA), and Isolated Population Area (IPA) for the lesser prairie-chicken.

Alternative B adopts the concepts of the Conservation Strategy in Alternative A and adds measures designed to provide greater protection of lesser prairie-chicken and sand dune lizard habitat.

Alternative C analyzes the zone concepts of Interim Management. Alternative D focuses on current occupied habitat for both species. Alternative E would apply the suggestions for special management from the Lesser Prairie-chicken ACEC nomination.

Federal statutes charge BLM to manage public land and resources based on the principle of multiple-use. While the driving force for change is the need to change management prescriptions in the context of special status species habitat, other uses of public land and resources come into play. In addition to listing the proposed changes in the prescriptions for managing special species habitat, this chapter will also list the proposed changes in the management prescriptions for designating interstate utility corridors in the Planning Area, oil and gas leasing, the subsequent development of those oil and gas leases through the reclamation phase, livestock grazing, and off-highway vehicle use (OHV) designations.

CONTINUING MANAGEMENT GUIDANCE

This section describes the basic management policy and program direction that will continue to apply under all alternatives. This direction is fundamental and its associated guidance is based on laws, regulations, manuals, policies, executive orders, memoranda, and applicable planning documents. The information that follows pertains to public land in the Pecos District Office including the Planning Area.

Lands and Realty

The objective of the lands program is to facilitate the acquisition, exchange, or disposal of public land in order to provide the most efficient management of public resources. The program is responsible for processing land withdrawals, granting rights-of-way (ROWs) and easements on public land, and acquiring easements on nonpublic land where necessary. The lands program also issues leases and patents

under the Recreation and Public Purpose (R&PP) Act, and licenses and permits for specific uses such as filming or special events.

Recreation and Public Purpose

Land would continue to be available for disposal to governmental or non-profit entities under the R&PP Act for public parks, building sites and correction centers, or other public purposes. BLM generally leases the land for up to 5 years or until substantial development has been completed and then the land may be patented. All applications are subject to public review and the National Environmental Policy Act (NEPA) process.

Rights-of-Way

Under the authority of the Federal Land Policy and Management Act (FLPMA) and the Mineral Leasing Act of 1920, BLM grants ROW leases and permits to qualified individuals, businesses, and government entities for use of public land. Energy-related ROWs for roads and pipelines are one of the primary activities in the Pecos District Office lands program. The District processes ROW applications for access, utilities and telephone lines, fiber optic lines, and other communication sites. BLM regulations specify the typical width allowed for different uses, including pipelines, roadways, and utility lines.

Roads and Access

The Pecos District has not had an active easement acquisition program. This is largely due to the numerous roads located throughout the District that have historically been open to the public. For the most part, this network of roads was generated by oil and gas development in the Planning Area. Any special restrictions, needs, or actions would be defined. BLM Manual 9113 (Roads) provides additional guidelines and standards for construction and maintenance

of transportation system roads on public land.

Fluid Minerals

The 1920 Mineral Leasing Act, as amended, authorizes the Secretary of the Interior to lease oil and gas resources on all public domain and Federally-acquired lands. Lands excluded from such leasing by legislation or secretarial policy is listed in CFR Title 43, Part 3100.0-3. They include units of the National Park System; incorporated cities, towns, and villages; and lands recommended for wilderness study, as well as lands within the National Wilderness Preservation System. BLM Lease Form 3100-11, Offer to Lease and Lease for Oil and Gas, contains standard terms and conditions (STCs) that grant the leaseholder the right to develop the oil and gas resource and provide for the general protection of surface and subsurface resources under normal operations.

BLM, as agent for the Secretary of the Interior, is responsible for processing applications for permit to drill (APDs) and administering or assisting with the minerals development programs on BLM, the U. S. Department of Energy (DOE), and other lands with Federal minerals. BLM responsibilities include conducting pre-drill inspections of the proposed drill sites; assessing the status of cultural resources and threatened or endangered species; conducting compliance inspections and enforcement actions for lease terms and conditions, safety, production verification, and site maintenance; and abandonment inspections of drilling locations. In situations where there are Federal minerals underlying tribal, State, private, or other land ownership (split estate), BLM requires the operator or lessee to obtain a surface use agreement with the surface owner or post a bond if an agreement cannot be reached before an APD can be approved. BLM regulations, orders, notices, standard conditions of approval, and general requirements constitute the range of

standard procedures and environmental protection measures that are applied to individual operators and projects, as applicable, and are authorized by 43 CFR 3160. BLM Onshore Oil and Gas Orders and Notices to Lessees are applied as standard operating procedures.

New Mexico BLM has issued a number of Notice to Lessees (NTL) to those companies that operate on Federal and Indian leases. The NTLs provide instructions for a specific field or area of BLM jurisdiction. The NTLs are consistent with or exceed the minimum standards specified in the 43 CFR 3160 regulations or Onshore Orders. The BLM applies the STCs as well as special stipulations to the construction and operation of wells, pipelines, and compressors. STCs address the condition and management of the well location, associated equipment, access road, and reseeding and abandonment. STCs also ensure protection of cultural resources, compliance with the Endangered Species Act (ESA) of 1973, as amended, and the conservation of sensitive species.

The Pecos District Office uses the “BLM General Requirements for Oil and Gas Operations on Federal and Indian Lands” as a condition of approval (COA) that describes general requirements and standard plan of operations for wells drilled in its jurisdiction. The conditions may be supplemented by additional mitigation measures supplied by applicable surface managing agencies or surface owners in cases of split estates. If a surface managing agency or surface owner has supplied BLM and the operator with a reasonable written environmental requirement, the requirement may be incorporated into the APD if it does not affect adjacent Federal or Indian surface; does not compromise safety or conservation; or does not negate minimal Federal restoration requirements in cases of abandonment. Surface managing agencies in the Planning Area include DOE. Surface owners can include private surface owners,

Indian tribes, and the State of New Mexico. BLM grants approvals for routine modifications to a well’s construction and operating plan via sundry notice.

BLM must decide what lands are to be leased to access Federal minerals and whether special management constraints modifying the STCs are needed to protect the environment and other resources. For example, many of these constraints are designed to reduce erosion and sedimentation in order to minimize the impacts on soil and water resources. These constraints are generally appended to a lease at the time of lease offer or as COAs on APDs. These constraints are most often applied within special designations such as Special Management Areas (SMAs) or Areas of Critical Environmental Concern (ACECs). Stipulations include seasonal closures, or timing limitations (TL), that prohibit exploration, development, or any surface disturbing activities for designated time periods during the year to benefit wildlife. Controlled Surface Use (CSU) constraints are used to identify restrictions on well locations, surface use, or operations year-round in order to protect specific resource values or uses. No Surface Occupancy (NSO) constraints are intended for use when other constraints are insufficient to adequately protect the resource values and uses.

Lease exceptions, modifications, and waivers of management constraints can only be granted by the BLM if circumstances have changed or if the lessee demonstrates that operations can be conducted without harming the protected resource values and uses. Exceptions, modifications, and waivers are considered on a case-by-case basis as changes in the resource or management situation occur. Waivers, exceptions, modifications would be subject to other applicable regulatory and environmental compliance requirements.

Site-specific environmental assessments (EAs) are required prior to siting a new well.

During this process, environmental impacts are identified and management constraints are developed, which will mitigate impacts to the environment, public health and safety, cultural resources, and threatened, endangered, and sensitive species. The mitigation measures become the COAs attached to the permits for surface disturbing activities, such as APDs and sundry notices. Similarly, mitigation measures are attached as stipulations to right-of-way (ROW) grants, and as conditions on geophysical operations. Each mitigation measure is applied to protect a resource that would be affected by the operation being approved, even on existing leases. A reclamation management plan is also required.

Solid Minerals

Federal land in the Planning Area is an important source of mineral materials for construction projects in the region, including sand and gravel, rock and stone, and other fill materials. The Pecos District issues Contracts (Form 3600-9 and 5450-5) and Permits (Form 5510-1) for the removal of mineral materials managed under 43 CFR 3600. These contracts and permits can be issued for up to 5 years and 200,000 cubic yards of material. Any amount, greater than 200,000 cubic yards, must be offered through a competitive bid. A mining plan, a reclamation plan, and a weed management plan are required with the contract or permit application, and plans must conform with modern mining and reclamation standards. The proposed operation plan goes through the NEPA process with the preparation of an EA, and is approved if the mining and reclamation plans comply with the existing land use plans and include appropriate mitigation measures. BLM is responsible for inspection and enforcement on all contracts and permits.

Alternative Energy

At present, there are no renewable energy facilities on public land in Pecos District.

BLM, in conjunction with the Department of Energy's (DOE's) National Renewable Energy Laboratory, has conducted an assessment of the opportunities for development of renewable energy resources on land managed by BLM. The Planning Area did not meet the screening criteria to be considered as a potential area for the location of biomass, or geothermal energy generation facilities. Economic and societal forces beyond the control of the BLM dictate the level of interest in renewable energy. Future applications for wind or solar sites would undergo site-specific environmental analysis as part of the ROW or commercial lease process.

Soils and Water

BLM's soils and watershed program places emphasis on preventing or avoiding further degradation of soil and water resources, as well as their conservation. The soils program will continue to provide support to other resource activities and also continue to emphasize its legislative mandates for the protection, maintenance, and enhancement of the soil resources. Policy and guidance for the management of soil resources associated with land administered by BLM are found in Manual Sections 7000 and 7100. Soil and water conservation practices will be used to develop site-specific Best Management Practices (BMP) at the project level to prevent or reduce the amount of pollution to a level compatible with water quality goals.

It is BLM policy to protect water resources through the Clean Water Act (CWA) programs such as the Non-point Source Pollution Program and the Riparian Program. The Non-point Source Pollution Program emphasizes improving water quality in degraded stream systems. The Riparian Program is concerned with maintenance and restoration of riparian zones both vegetative and hydrologically. Both programs have parallel or similar goals, and accomplishments in any one usually are beneficial to the others.

Water quality regulations in the U.S. receive its basic authority from two laws. The Federal Water Pollution Control Act of 1972, as amended by the CWA of 1977, is the basic authority for instream water quality standards and maximum permissible pollution discharges. The Safe Drinking Water Act of 1974 is the basic authority for domestic water quality standards.

The BLM's water resource program includes participation with the State and Environmental Protection Agency (EPA) in water quality management. Specifically, the BLM works to ensure that the management and development practices comply with State water quality standards. The hydrology program will continue to emphasize legislative mandates of protection, maintenance, and enhancement of the resources, as well as provide support to other resource activities for the Pecos District. Policy and guidance for the management of water resources associated with land administered by the BLM is summarized in Manual Sections 7000, 7200, and 7240.

Floodplains

BLM's floodplain management program places emphasis on restoring, protecting, maintaining, and enhancing the functions of the floodplain and conserve natural floodplain values including wildlife habitat, water quality, flood water retention, and ground water recharge. The 100-year floodplain, for administrative purposes, serves as the basis for floodplain management on public land. The 100-year floodplain is based on Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency (1983).

Surface disturbance will not be allowed within up to 200 meters of the outer edge of 100-year floodplains, to protect the integrity of those floodplains. On a case-by-case basis, an exception to this requirement may be considered based on one or more of the criteria listed below. The first three criteria

would not be applied in areas of identified critical or occupied habitat for Federally-listed threatened or endangered species.

- Additional development in areas with existing developments that have shown no adverse impacts to the riparian areas as determined by the Authorized Officer, following a case-by-case review at the time of permitting.
- Suitable off-site mitigation if habitat loss has been identified.
- An approved plan of operations ensures the protection of water or soil resources, or both.
- Installation of habitat, rangeland or recreation projects designed to enhance or protect renewable natural resources.

Air Quality

All BLM actions and use authorizations must comply with all applicable local, State, tribal, and Federal air quality laws, statutes, regulations, standards, and implementation plans. The New Mexico Air Quality Bureau (NMAQB) is responsible for enforcing the State and National ambient air quality standards in New Mexico. Any proposed emission source would have to comply with the NMAQB regulations. Proposed sources that emit more than 10 pounds per hour or 25 tons per year of any air pollutant for which there is a National or State ambient air quality standard would have to demonstrate that these emissions would not contribute to an exceedance of an ambient air quality standard or substantially degrade air quality within pristine Federal Class I areas, such as National Parks greater than 6,000 acres or National Wilderness Areas (NWA) greater than 5,000 acres.

Vegetation - Invasive Weed Management

BLM's goal is to detect new invasive plant species populations, prevent the spread of new invasive populations, manage existing populations using tools of integrated weed

management, and eradicate invasive populations. EO 11312, Invasive Species-1999, the Federal Noxious Weed Act of 1974, the New Mexico Noxious Weed Management Act of 1978, and the Federal Plant Protection Act of 2000 require the development of a weed management program.

This program focuses on the inventory of existing infestations, prevention of noxious weed invasion, monitoring revegetation efforts for invasive weeds, and assessment of the success of weed control efforts. This is accomplished when and where possible using the safest environmental methods available in a timely manner. Prevention and management of invasive plants assists in improving the health of public land.

Livestock Grazing

The objective of this program is to promote healthy sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangeland to properly functioning condition; to promote the orderly use, improvement, and development of the public land; to efficiently and effectively administer domestic livestock grazing; and to provide for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy public rangelands.

The livestock grazing program is authorized principally by FLPMA, the Taylor Grazing Act of 1934, and the Public Rangelands Improvement Act of 1978. BLM must provide grazing permittees or lessees notice 2 years in advance of cancelling their grazing permit or lease if the lands in their allotment would be devoted to another public purpose, including disposal.

Three major parts of the program are grazing administration, resource inventory and monitoring, and range improvement.

Grazing administration consists of issuing and supervising permits and leases that authorize livestock grazing. Related tasks include detecting and abating unauthorized use and supervising allotments. Analysis of resource monitoring and inventory information is used to evaluate and adjust grazing use. Range improvement helps enhance rangeland resource conditions for a variety of uses, including domestic livestock and wildlife forage and watershed protection.

Public rangeland will be managed to meet the Standards for Public Land Health (BLM 2000a). If the Standards are not met due to livestock management practices, the Livestock Grazing Management guidelines offer tools to guide the Pecos District to improve those areas not meeting the Standards. Guidelines are reasonable and practical management options for livestock grazing, which when applied, move rangelands toward the Statewide standards. The guidelines are developed for public land livestock grazing, not for unsuitable land or land where livestock grazing does not occur. They are based on science, past and present management experience, and public input. These guidelines will be used to develop grazing management practices that will be implemented at the watershed, allotment, or pasture level.

Specific application of these guidelines, or Livestock Grazing Management Practices, occur at the field office level, in consultation, cooperation, and coordination with lessees, permittees, interested public, and landowners. Their implementation is carried out with recognition for the impact that BLM's management objectives have on adjacent landowners. Guidelines are designed to encourage innovation and experimentation in the development of alternative livestock grazing management practices. They improve rangeland health and consider the natural migration patterns of wildlife.

Standards for Public Land Health and Livestock Grazing

All BLM activities are expected to meet the New Mexico Standards for Public Land Health that was accepted by the Secretary of the Interior as part of the Record of Decision for the Statewide RMP Amendment/EIS for Standards for Public Land Health and Guidelines for Livestock Grazing Management (BLM 2000a). BLM determines whether activities meet the standards by evaluating the results against indicators developed for each standard. The standards describe the conditions needed for healthy public land under three categories, Upland Sites, Biotic Communities, and Riparian Sites, summarized below.

Upland Sites Standard

Healthy upland ecological sites are in a productive and sustainable condition within the capability of the site. Upland soils meeting the standard are stable and exhibit infiltration and permeability rates that are appropriate for the soil type, climate, and landform. The combined kind, amount, or pattern of vegetation provides protection on a given site to minimize erosion and assist in meeting State and tribal water quality standards. Indicators for this standard may include, but are not limited to, the following:

- Consistent with the capability of the ecological site, soils are stabilized by appropriate amounts of standing live vegetation, protective litter or rock cover.
- Erosion is indicated by flow patterns characteristics of surface litter soil movement, gullies and rills, and plant pedestalling.
- Satisfactory plant protection is indicated by the amount and distribution of desired species necessary to prevent accelerated erosion.

Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard

Ecological processes such as the hydrologic cycle, nutrient cycle, and energy flow support productive and diverse native biotic communities, including special status, threatened, and endangered species. Desired plant community goals maintain and conserve productive and diverse populations of plants and animals that sustain ecological functions and processes. Restoration should first be achieved with native plants, and when appropriate, non-native plants. Indicators for this standard may include, but are not limited to, the following:

- Commensurate with the capability of the ecological site, plant and animal populations are productive, resilient, diverse, and sustainable.
- Landscapes are composed of communities in a variety of successional stages and patterns.
- Diversity and composition of communities are indicated by the kinds and amount of species.
- Endangered and special status species are secure and recovering, with the goal of delisting and ensuring that additional species need not be listed within New Mexico.

Riparian Sites Standard

Healthy riparian areas are in a productive, properly functioning, and sustainable condition, within the capability of each site. There is present adequate vegetation of diverse age and composition to withstand high stream flow, capture sediment, provide for groundwater recharge, provide habitat, and assist in meeting State water quality standards. There are no riparian sites within the Planning Area.

Wildlife - Special Status Species

Special status species are managed in accordance with BLM Manual 6840. The ESA (Public Law [PL] 93-205), as amended (PL 100-478), requires special protection and management for Federally-listed threatened or endangered (T&E) species, species proposed to be listed as T&E, and designated and proposed critical habitat. The act also requires the development and implementation of recovery plans for the conservation and survival of T&E species. In accordance with BLM Manual 6840, BLM also manages a large number of sensitive, non-listed species to protect them and prevent the need to list them as threatened or endangered. The purpose of this management prior to Federal listing is to use a broad range of management options to protect a species.

Federal and State-listed species are protected by requiring site-specific evaluations and clearances and by applying more stringent management prescriptions in areas that have been specially designated to protect target species. When a proposed project falls within habitat that has been designated as having the potential to support a protected species, a field survey is required prior to authorization of the project. When a new threatened, endangered, or proposed species protected by the ESA is listed, any potential habitat for that species is added to the conflict map. Any action that may affect Federally-listed species also requires consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the ESA.

Major legislation requiring actions by Federal agencies to protect T&E species, as well as other protected, non-Federally listed species and habitats, include the following:

- Fish and Wildlife Conservation Act of 1980 (PL 96-366).
- Fish and Wildlife Coordination Act of 1958 (PL 85-654).

- Migratory Bird Treaty Act of 1976 (PL 94-576).
- Plant Protection Act of 2000 (PL 106-224).

Fire Management

The objective of the fire program is to manage and use fire consistent with its natural role in the functioning ecosystem, and the protection of life and property. The program guidance is documented in the 2004 Fire and Fuels Management Plan Amendment and Environmental Assessment for Public Land in New Mexico and Texas. The plan adheres to the National Fire Plan and 2001 Federal Fire Policy.

Cultural Resources

The New Mexico BLM cultural resource program operates under the provisions of a 1997 National Programmatic Agreement among the BLM, the Advisory Council for Historic Preservation (ACHP), and the National Conference of State Historic Preservation Officers (SHPOs), and a 1998 Protocol Agreement between New Mexico BLM and New Mexico State Historic Preservation Officer. Although these agreement documents have greatly streamlined the BLM interaction with SHPO and the ACHP, the BLM still has significant and ongoing consultation obligations and responsibilities with Native American tribes, local and State governments, other Federal agencies, and interested groups and individuals.

Much of the workload of the cultural resource staff involves ensuring that Federal undertakings associated with, but not limited to, oil and gas development, extraction and transportation are in compliance with Section 106 and other applicable preservation laws and regulations. Over 1,000 undertakings are reviewed each year, ranging from a single well pad to major pipeline gathering

systems. BLM's policy has been to prevent impacts by planning the undertaking to avoid cultural resources. If impacts to the cultural resources cannot be avoided, mitigation of the effect is conducted prior to approval of the undertaking or required as a stipulation on the approval. A wide range of measures is used to avoid or mitigate impacts on cultural resources.

Specific legal requirements, which the BLM and other Federal agency cultural resource management programs operate under to meet the program objectives, include:

- American Antiquities Act of 1906 (PL 59-209; 34 Stat. 225; 16 USC 432, 433). The act is implemented by uniform regulations at 43 CFR Part 3.
- Recreation and Public Purposes Act of 1926 (PL 69-386; 44 Stat. 741; 43 USC 869). See 43 CFR Subpart 2741 and Manual Section 2740.
- Historic Sites Act of 1935 (PL 74-292; 49 Stat. 666; 16 USC 467-467).
- Regulations implementing the Landmarks program are at 36 CFR Part 65.
- Reservoir Salvage Act of 1960, as amended by Archaeological and Historic Preservation Act of 1974 (PL 86-523; 74 Stat. 220, 221; 16 USC 469, PL 93-291; 88 Stat. 174; 16 USC 469).
- National Historic Preservation Act (NHPA) of 1966 (PL 89-665; 80 Stat. 915; 16 USC 470 et seq.), as amended. Section 106 of the Act is implemented by regulations of the Advisory Council on Historic Preservation (ACHP), 36 CFR Part 800.
- National Environmental Policy Act of 1969 (PL 91-190; 83 Stat. 852; 42 USC 4321). The Act is implemented by regulations of the Council on Environmental Quality, 40 CFR 1500-1508.
- Archaeological and Historic Preservation Act of 1974 (PL 86-523; 16 USC 469-469c).

- Federal Land Policy and Management Act of 1976 (PL 94-579; 90 Stat. 2743; 43 USC 1701; "FLPMA").
- American Indian Religious Freedom Act of 1978 (PL 95-431; 92 Stat. 469; 42 USC 1996).
- Archaeological Resources Protection Act of 1979 (PL 96-95; 93 Stat. 721; 16 USC 470aa et seq.) as amended (PL 100-555; PL 100-588). It is implemented by uniform regulations and departmental regulations, both in 43 CFR Part 7.
- Native American Graves Protection and Repatriation Act of 1990 (PL 101-601; 104 Stat. 3048; 25 USC 3001). The Secretary of the Interior's implementing regulations are in 43 CFR Part 10.
- EO 11593 ("Protection and Enhancement of the Cultural Environment," 36 FR 8921, May 13, 1971).
- EO 13007 ("Protection of Religious Practices and Sacred Sites" [1996]).
- 36 CFR 60 - National Register of Historic Places (NRHP) (1981).
- 36 CFR 63 - Determinations of Eligibility for Inclusion in the NRHP.
- 36 CFR 79 - Curation of Federally Owned and Administered Archaeological Collections.
- Guidelines for Federal Agency Responsibilities, Under Section 110 of the NHPA.
- The Secretary of the Interior's Professional Qualifications Standards (48 FR 44716, September 29, 1983).
- The Secretary of the Interior's Standards for the Treatment of Historic Properties, 1995.

The BLM cultural program operates under a National programmatic agreement with the ACHP and SHPOs. As part of the agreement, a Preservation Board was established. Implementation of the agreement in New Mexico is through a protocol agreement with the State Historic Preservation Office (SHPO). Relevant documents include:

- Programmatic Agreement among the BLM, the ACHP, and the National Conference of State Historic Preservation Officers regarding the manner in which BLM will meet its responsibilities under the NHPA (1997).
- BLM Charter for the Preservation Board (1997).
- Protocol Agreement between New Mexico BLM and New Mexico State Historic Preservation Officer (1998). Program guidance for the BLM cultural resources program is found in these Washington Office released manuals:

8100 Manual—Cultural Resource Management.

8110 Manual—Identifying Cultural Resources.

8120 Manual—Protecting Cultural Resources.

8130 Manual—Utilizing Cultural Resources for Public Benefit.

8160 Manual—Native American Coordination and Consultation.

Specific BLM cultural resource program guidance for public land under the responsibility of the New Mexico State Office is provided in the Handbook H-8100-1, *Procedures for Performing Cultural Resources Field Work on Public Lands in the Area of New Mexico State BLM Responsibility* (2002).

Paleontology

Paleontological resources are managed on public land because they are nonrenewable resources of value to scientists, educators, hobbyists, commercial collectors, and other members of the public. Without protection, the resources may be intentionally or unintentionally damaged or destroyed, causing valuable information to be lost. Paleontological resource protection objectives include facilitating research and collection on public land, use for education and recreation, protecting scientifically valuable resources that may be in conflict

with other land and resource uses, and protecting scientifically valuable fossils, as required by law.

The paleontology program achieves these objectives through the following activities (BLM 1987a):

- Identifying and evaluating paleontological resources so they may be adequately addressed in planning and environmental analysis documents.
- Maintaining and conducting an effective and continuing protection program.
- Increasing the awareness of Federal land managers and the public regarding the significance of paleontological resources and management requirements, and encouraging public participation in resource management.
- Developing volunteer or cooperative management agreements and associations with individuals, professional paleontologists, local organizations and governments, and the scientific community.
- Avoiding or mitigating impacts to valuable paleontological resources.
- Avoiding publicizing the exact locations of scientifically significant paleontological resources if such attention would conflict with management objectives.
- Managing and issuing collection permits when appropriate.

Recreation

The objective of the outdoor recreation program is to ensure the continued availability of public land for a diverse array of quality resource-dependent outdoor recreation opportunities. Recreation use is managed to protect the health and safety of visitors; to protect natural, cultural, and other resource values; to stimulate enjoyment of public land; and to resolve user conflicts. Visitor demands and new recreation uses and opportunities will continue to influence how and what

recreational opportunities are provided in the Pecos District area.

FLPMA provides for management of outdoor recreation on public land. Section 202(c) (9) calls for land use planning consistent with Statewide outdoor recreation plans. Other National laws that govern recreation management in the Pecos District area include the National Trails System Act of 1968, as amended; the Federal Land Recreation Enhancement Act of 2005, the R&PP Act, as amended; and the Wilderness Act of 1964.

Most public land is managed to maintain a freedom of recreational choice with a minimum of regulatory constraints, as long as such use occurs in a responsible manner. Few BLM recreational facilities or supervisory efforts exist on this land, which are referred to as extensive recreation management areas (ERMAs). Where the nature of the resource attracts intensive recreational use, public land may be managed as special recreation management areas (SRMA). These are areas where the BLM makes major investments in recreational facilities and visitor assistance. Specific management direction in a SRMA is formulated by the BLM to provide for resource protection and public health, safety, and enjoyment.

Recreation Opportunity System

The outdoor recreation program uses the Recreation Opportunity Spectrum (ROS) as the basic tool for inventory and management to ensure the general public a continued variety of quality recreational opportunities. Providing opportunities for backcountry recreation and more developed types of recreation close to major urban areas is emphasized. An effort is made to locate and establish use areas and trails compatible with social and natural environments in close proximity to heavily populated areas.

A broad range of outdoor recreation opportunities such as backpacking, camping, sightseeing, fishing, boating, picnicking, horseback riding, wildlife viewing, OHV use, mountain biking, and motorcycling is provided for, in an attempt to meet varying public needs. Access is maintained and developed, where necessary, to enhance recreation opportunities and allow public use.

Off-Highway Vehicle Use

43 CFR 8340 provides for OHV use as a legitimate activity on public land wherever it is compatible with other resource management objectives. OHV designations are administrative, allowing management flexibility in response to changes in the environment. All public land is designated as "open," "limited," or "closed" to motorized vehicles (see Glossary). These designations are made in RMPs for public land in each Field Office area.

Emergency OHV limitations of use, and closure of areas and trails to OHV use, can occur under the authority of 43 CFR 8341.2. However, emergency closures are not OHV designations. Emergency closures can be done on a case-by-case basis to prevent or stop unnecessary degradation of resources or adverse effects to other authorized uses. Emergency closures remain in effect only until an interim or standard designation can be made, or until the adverse effects are eliminated and measures to prevent their recurrence have been implemented.

OHV use has increased substantially in the Pecos District over the last decade and is an increasing concern for all resource programs. The outdoor recreation program is concerned with providing access to recreational areas and opportunities in appropriate settings for OHV activities without degrading the intrinsic qualities of the landscape that are important for a range of public land resource values. BLM is also concerned with providing adequate access to resources and facilities on public land.

Visual Resource Management

Legislation such as FLPMA, NEPA, and Surface Mining Control and Reclamation Act (SMCRA) outline the BLM's responsibilities for protecting the quality of the visual (scenic) values of public land. Policy and management guidance is also provided in BLM Manuals 8400, 8410-1, and 8431-1. Public land has a variety of visual values. These different values warrant different levels of management. Because providing the same level of management for all visual resources is neither desirable nor practical, the BLM systematically identifies and evaluates these resources to determine an appropriate level of management.

Visual values are identified through the BLM Visual Resource Management (VRM) inventory process and are considered with other resource values in the RMP. The inventory consists of a scenic quality evaluation, a visual sensitivity level analysis, and a delineation of distance zones. Based on these three factors, BLM-administered land is placed into one of four visual resource inventory classes (Class I through Class IV). A VRM class identifies suggested degrees of human modifications that should be allowed in a landscape to protect visual resources, with Class I allowing the least modification and Class IV the most.

VRM classes are not used as a device to stop surface disturbing activities. The inventory classes represent the relative value of the visual resources, with Class I assigned to areas where the visual value is the greatest. These include Wilderness Areas (Was), Wilderness Study Areas (WSAs), wild and scenic rivers, and other congressionally and administratively designated areas where decisions have been made to preserve a natural landscape.

Most of the Planning Area is presently designated as a Class III or Class IV. These classes provide the visual

management standards for the design and development of future projects and for rehabilitation of existing projects. Visual design considerations shall be incorporated into all surface-disturbing projects regardless of size or potential impact and is a management responsibility shared by all resource management programs. Each class designation has a defined management objective and can be found in the Glossary.

Special Management Areas (SMAs)

The objective of the SMAs in the District is to protect, maintain, and enhance the special resource values on public land. Areas that have special resource values are identified where some uses may be restricted in order to protect the resources. These areas include public land such as SMAs, ACECs, WA, WSAs, SRMAs, and research natural areas (RNAs). There are no wilderness areas or wilderness study areas within the Planning Area.

MANAGEMENT COMMON TO ALL ALTERNATIVES

The following management prescriptions of existing land use plans would be applied to all alternatives in the Planning Area.

Lands and Realty

In order to comply with Section 368 of the Energy Policy Act of 2005, the Pecos District would designate utility corridors for major projects such as interstate electric transmission lines; pipelines; and communications lines for interstate use. New projects of these types would be sited in the utility corridors shown on Map U-1. The corridors depicted on Map U-1 would be no more than 3,500 feet wide and their compatible uses (pipelines only or electric transmission lines only or both uses) are explained in the map legend. The corridors depicted on Map U-1 include those that will be analyzed in the West-wide Energy

Corridor Programmatic Environmental Impact Statement. Information about this EIS can be obtained on-line at www.corridoreis.anl.gov

New projects of the type described above that propose to cross the Planning Area would be evaluated based on the impacts to lesser prairie-chicken and sand dune lizard habitats and other resources to meet the overall objectives of this plan. These projects would not be located in ROW avoidance areas if other routes can meet the purposes of the project. Lands acquired as habitat for Special Status Species would be added to the ROW exclusion area for major projects.

Minor ROWs for facilities such as fences, range and wildlife water pipelines, power distribution lines, access to oil and gas facilities, or oil and gas collection or distribution pipelines would be considered in exclusion and avoidance zones on a case-by-case basis to meet the overall objectives of this plan.

The Mescalero Sands ACEC and the Mathers RNA would continue to be ROW exclusion areas. The Laguna Plata and Maroon Cliffs Archeological Districts would continue to be ROW avoidance areas. The Mescalero Sand North Dune OHV Area would continue to be ROW avoidance areas. See Map NAA-1.

Landfills, hazardous waste disposal sites, and produced water disposal pits would not be authorized under ROWs or R&PP leases.

For all other projects in the Planning Area, public land would be open to the consideration of granting ROWs under the guidelines in Appendix 2 of the 1997 Roswell RMP and 1997 Carlsbad RMPA. (Both the RMP and RMPA are available

online at www.nm.blm.gov. Click on Planning/NEPA under Programs.)

Whenever possible, facilities would be confined to existing alignments, minimizing width requirements and maximizing multiple-occupancy. ROWs would be granted only after site-specific analysis. Development of specific agricultural leases may be considered only when the lease is compatible with or enhances the land's identified resource values.

Access to public land would be provided throughout the Planning Area. Easements would be acquired across non-Federal land to provide access to the public land for recreational, special management, and other resource needs. Priority for acquisitions of easements would be placed on former county roads vacated by the county government, when those roads are important for the management of the public land. Access would be closed, or restricted, where necessary and in accordance with OHV designations, to protect public health and safety or areas with significant resource values.

To reduce surface disturbance in the Planning Area, the decision to bury pipelines less than 5 inches in diameter would be determined on a case-by-case basis to meet the overall objectives of this plan. All pipelines greater than 5 inches in diameter and any lines with a pressure greater than 125 psi must be buried. If the use of plastic pipe is approved, the pipe must meet American Petroleum Institute specifications or equivalent standard specifications and intended use from pipe manufacturer.

BLM would work with all parties involved to remove idle power lines and poles within the Planning Area. The goal is to reduce habitat fragmentation and restore habitat for the lesser prairie-chicken.

Minerals

Fluid Minerals

The BLM would continue to require oil and gas lessees to conduct operations in a manner that would minimize adverse impacts to resources, land uses, and other users. To that end, the BLM would continue to apply reasonable mitigating measures to all oil and gas activities.

Requirements that have been issued in Orders or Notices to Lessees (NTL) concerning environmental and other factors associated with the drilling of oil and gas wells would continue to be enforced, as would future orders and NTLs. Regulation of pits falls under the jurisdiction of the New Mexico Oil Conservation Division. Open-top tanks, disposal pits, or other open pits would be required to be covered with a fine mesh netting to make them inaccessible to birds, bats and other wildlife.

Plans of Development (POD) may contain proprietary information which would prohibit its disclosure under the Freedom of Information Act.

Soils

Current soil management strategies and prescriptions identified and analyzed in the 1988 Carlsbad RMP (available on-line at www.nm.blm.gov) and the Roswell RMP would continue unchanged in the Planning Area. As specified in both the 1997 Carlsbad RMPA and the 1997 Roswell RMP, no surface disturbing activities would be allowed on slopes over 30 percent or on fragile soils. The slope restriction would not apply to livestock grazing.

Water Resources

Current surface water quantity management strategies, in both the Carlsbad and Roswell Field Offices, would continue unchanged in

the Planning Area. See the 1997 Carlsbad RMPA and the 1997 Roswell RMP.

This includes Best Management Practices (BMPs) that would be developed in activity plans for actions that degrade surface water quality through non-point source pollution. The primary emphasis of BMPs would be on preserving water quality. Surface water quality parameters that would be addressed in BMPs include, but are not limited to: water temperature, turbidity, sediment transport and yield, chemical loading, and nutrient loading.

BMPs would be developed on a case-by-case basis for actions that degrade groundwater quality through non-point source pollution, for groundwater with 10,000 mg/l total dissolved solids (TDS) or less. The primary emphasis of BMPs would be on preserving water quality. Groundwater quality parameters that would be addressed in BMPs include, but are not limited to: TDS, pH, volatile organic compounds, and heavy metals.

Floodplains

Current floodplain management strategies, in both the Carlsbad and Roswell Field Offices, would continue unchanged in the Planning Area. See the 1997 Carlsbad RMPA and the 1997 Roswell RMP.

Air Quality

Current air quality management strategies, in both the Carlsbad and Roswell Field Offices, would continue unchanged in the Planning Area. See the 1997 Carlsbad RMPA and the 1997 Roswell RMP.

Standards for Public Land Health and Guidelines for Livestock Grazing

BLM amended the Carlsbad and Roswell Resource Management Plans to incorporate the *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing*

Management (January 2001), which adopted standards for public land health and guidelines for livestock grazing management in New Mexico. The standards describe conditions needed for healthy, sustainable public rangeland and relate to all uses of public land. The livestock grazing guidelines are management practices that are applied if it has been determined that grazing practices are responsible for non-achievement of a Standard. They are designed to improve public land health and are to be implemented at the watershed, allotment, or pasture level.

There are different indicators that provide a measure of resource quality and functioning condition upon which the standards for public land health would be assessed. These indicators describe attributes of soil and site stability, watershed function, and biotic (plant and animal) integrity. The assessment process is a combination of qualitative and quantitative techniques that use observations and measurements made in the field to assign numeric values or rankings to each indicator. The indicators are rated relative to the degree of departure from what a healthy site would look like. For instance, if a healthy site is described as having no or few rills and the assessed site has few rills, then it is rated as none to slight departure. Conversely, if the assessed site has many rills, the site is rated as having severe departure. Once each of these indicators has been rated, these rankings are combined to determine soil and site stability, watershed function, and biotic integrity. Some indicators are used in all three of these categories, some in two of the three, and some in only one specific category. The Carlsbad Field Office uses 21 different indicators, while the Roswell Field Office uses 22 of them.

The assessment process is based on the ecological site description and is done on a watershed basis. The Carlsbad and Roswell Field Offices have schedules in place to determine the order in which each

watershed area is assessed. These schedules were established based on input from other Federal and State agencies and various public comments. The indicators are rated against the soil, vegetation, and animals described as typically present in that ecological site. During the rating process, site capability and current weather patterns are considered. Site capability is a measure of expected conditions such as degree of erosion or pounds per acre of vegetative production. If a site has been degraded over time, from whatever type of disturbance, it would be rated based on its current capacity. Similarly, if a site has experienced abnormal precipitation, either very dry or very wet, then these weather conditions would be factored into the indicator ratings.

In addition to these indicators, both Field Offices have over 20 years of rangeland monitoring data collected at permanently established study plots. This data provides information about range condition, amount of annual vegetative production, composition and cover of vegetation, utilization amounts, and precipitation. This data will be used along with the assessment process to determine if the Standards for Public Land Health are being met.

Vegetation

General management objectives are to improve vegetative composition, cover, and production in areas that currently do not meet the vegetation condition objectives; and to maintain vegetation condition in areas that meet vegetation condition objectives.

A total of 386 long-term range monitoring studies have been established on 84 allotments in the Planning Area. These studies collect data on livestock use, forage production and utilization, climatic data, and ecological condition and trend. The intensity and frequency of monitoring efforts vary with selective management categories, with "I" category allotments monitored at a

greater intensity and frequency than "M" and "C" allotments. Other monitoring data includes more recent Robel pole studies, photo trend plots, and Rangeland Health Evaluations. This data will continue to be collected within the Planning Area.

A site may provide suitable vegetative composition but lack the vertical structure required for successful lesser prairie-chicken nesting and concealment. Sampling transects of pastures using the Robel method in the late fall to early spring (November 1 to February 28 prior to the leafing out of shinnery oak and immediately prior to nesting), provides a standardized measure of the average height of residual grasses favored by lesser prairie-chickens for nest placement. The vegetative objective would be that at least 10 percent of all survey points should provide a Robel visual obstruction reading of at least 12 inches and a minimum average of 4 inches.

Current management would continue as identified in each Field Office RMP, including brush control methods. Brush control would be implemented to achieve Standards for Public Land Health and meeting Desired Plant Community objectives. Reclamation efforts on abandoned pads, roads, and caliche pits would continue to address and reduce habitat fragmentation, restore native habitat and promote lesser prairie-chicken and sand dune lizard expansion opportunities.

Non-Native and Invasive Species

Management practices targeting species described in the Noxious Weed List for the State of New Mexico (NMDA, 1999) would follow those described in existing planning documents. The presence of those species described in the Noxious Weed List for the State of New Mexico (NMDA, 1999) is detected via continual inventory being carried on by all field going personnel. The inventory process is on-going to detect invasive populations when they are small.

Once a population is found, the Bureau coordinates with various agencies and the land user to implement some kind of treatment to remove or control the population.

Both Field Offices conduct noxious weed control via a Memorandum of Understanding between various Federal, State, County, and City agencies and private entities. These populations should be aggressively controlled to eliminate them or keep them small. Priority ranking for treatment of known populations is based upon the Class ranking of the species on the State List, the likelihood of the population to expand, the availability of funding and manpower, and time of year. High priority populations would be treated first, with Class A weeds having the highest priority for treatment, followed by Class B, then Class C. Control methods can be chemical, mechanical, fire, biological, or some combination.

Livestock Grazing

Management priorities among allotments within the Planning Area would be based on similar resource characteristics, management needs, and both resource and economic potential for improvement. Livestock grazing decisions made in the 1988 Carlsbad RMP and the 1997 Roswell RMP would be carried forward.

Management prescriptions would be applied as needed across the Planning Area with the intent of achieving landscape goals and objectives. Actions would be accomplished via consultation, cooperation and coordination with Federal, State, and local agencies, grazing permittees/lessees and interested publics. Special status species populations and their needs, whether known or found during monitoring, would be addressed using adaptive management to allow livestock grazing while enhancing habitat for these species.

The Planning Area encompasses approximately 1.85 million acres, including about 850,000 acres of public land and all or parts of 114 grazing allotments that would be available for livestock use. Currently, a total of 192,125 animal unit months (AUMs) are authorized either by Grazing Permit or Grazing Lease. Changes in these numbers and any necessary adjustments to stocking rates and other management practices would be made based on monitoring data, assessments of Standards for Public Land Health, and through consultation, cooperation, and coordination with the grazing permittee or lessee. Adjustments may include changing the kind and class of livestock, season of use in specific pastures, number of livestock, or grazing patterns.

Rangeland improvements are to be planned and implemented in accordance with priorities established through benefit/cost analysis and must meet design specifications and standard operating procedures. Higher priority for rangeland improvements will be given to "allotments that do not meet the Standards for Public Land Health and Guidelines for Livestock Grazing". Contributions for improvements in the form of labor, material, equipment, or money are to be encouraged and are a factor in determining priority ranking for allocating funds. Vegetation treatments are to be conducted to control undesirable vegetation or increase desirable vegetation consistent with multiple-use objectives. Areas potentially suitable for treatment have been identified in the Planning Area and would be refined during site-specific analysis. Chemical treatments, prescribed burns, and mechanical removal of undesirable vegetation have been conducted in various areas within the Planning Area over the last 20 years.

Wildlife – Special Status Species

Wildlife habitat management prescriptions delineated in existing RMPs would continue

in the Planning Area. These prescriptions include:

- Recovery plans for species Federally-listed as threatened or endangered would be implemented under the authority of the ESA, including the reintroduction or relocation of native special status species in suitable areas on public land in coordination and cooperation with local governments.
- The construction of fence enclosures or barriers would be considered in habitat of special status species (includes Federal threatened or endangered, Federal candidate, or State-listed wildlife and plant species) to protect all or portions of a specific habitat, specific populations, or to provide for scientific research on a species and its habitat. Fenced enclosures would also be considered to protect special habitat features such as wildlife waters, springs, or to provide for scientific research on a species and its habitat. The intent of using fences in this manner is to protect small areas (less than 10 acres), as opposed to fencing-out large areas of public land. It is expected that enclosures or barriers, if used, would be small in size and associated with specific sites. If it is determined to be necessary, mitigation measures such as anti-perching structures and fence markers would be used.
- Existing habitat management plans (HMPs) would be revised, as needed, to incorporate changes resulting from decisions made in this RMPA. Modifications in existing HMPs would include public participation and review through the NEPA process. Actions in existing HMPs would continue to be implemented.
- Surface disturbance would not be allowed on public land within known prairie dog towns or towns identified in the future. Exceptions to this

requirement would be considered for maintaining existing structures or facilities. Prairie dog control would not be authorized on public land, except in emergency situations involving public health.

- Surface disturbance would not be allowed within up to 200 meters of active raptor nests on special, natural habitat features, such as trees, large brush, cliff faces and escarpments. Surface disturbance would not be allowed within up to 200 meters of playas and alkali lakes.
- The shinnery oak dune plant grassland and mixed desert shrub community types in the Planning Area would be maintained for special status species and sensitive species requiring this habitat type. These include the black-tailed prairie dog, swift fox, mountain plover, burrowing owl, Bell's vireo, gray vireo, ferruginous hawk, loggerhead shrike, and Texas horned lizard.
- The Master Memorandum of Understanding between the BLM and the Animal and Plant Health Inspection Service, Animal Damage Control (now Wildlife Services, WS) would guide predator damage management (PDM) activities on public land in the Planning Area. BLM would coordinate with WS to provide for the welfare and perpetuation of wildlife and to be responsive to the needs of individuals or groups who use public land. Constraints on PDM can be found in the 1997 Roswell RMP.
- The following special status species are not present in the Planning Area:
Endangered Species: black-footed ferret, Northern aplomado falcon, interior least tern, Kuenzler's hedgehog cactus, Pecos gambusia, Sneed pincushion cactus, Koster's springsnail, Pecos assiminea snail, Roswell pyrg, Noel's amphipod; **Threatened Species:** bald eagle, Mexican spotted owl, Pecos

bluntnose shiner, Pecos sunflower, gypsum wild-buckwheat, Lee pincushion cactus; and **Candidate Species:** Texas hornshell.

- BLM would participate in and support the efforts of the Implementation Team for the Conservation Strategy.

The management prescriptions discussed in the alternatives later in this chapter would apply only inside the boundary of the Planning Area. If new lesser prairie-chicken leks outside the Planning Area are discovered in the future, the area around the lek would be considered occupied habitat and the prescriptions of the 1997 Roswell RMP/Carlsbad RMPA (Appendix 1 of both plans) would apply to proposed actions in and around that habitat. Similarly, if new sand dune lizard occupied habitat outside the Planning Area is discovered in the future, the prescriptions of the 1997 Roswell RMPA/Carlsbad RMPA (Appendix 1 of both plans) would apply in and around that habitat.

Fire Management

Within the Planning Area, the Carlsbad Field Office and the Roswell Field Office have two different fire management unit (FMU) categories. In Eddy and Lea Counties, the FMU category is "C," areas where wildfire is desired, but there are significant constraints that must be considered in the use of fire. In Chaves and Roosevelt Counties, the FMU designation is "D," areas where wildfire is desired and there are few or no constraints for its use.

The difference between the Field Office designations can be found in the differences in the extent and intensity in oil field development. In Eddy and Lea Counties, managed by the Carlsbad Field Office, there is extensive and intensive oil field development. Those same levels of development are less in Chaves and Roosevelt Counties, managed by the Roswell Field Office.

The fire suppression considerations for the FMU categories are different. Category C guidelines state ecological and resource constraints along with health and safety are to be considered in determining the appropriate suppression response on a case-by-case basis by the incident commander or line officer. By contrast, Category D guidelines state these areas offer the greatest opportunity to take advantage of the full range of options available for managing wildland fire under the appropriate management response. Health and safety constraints also apply.

Wildfire suppression would in all likelihood be applied equally regardless of the administrative boundary. Soils and topography would drive any decisions regarding suppression strategy in the Planning Area. Because of the sandy soils and dune topography, fire suppression strategies would be based on existing roads serving as control lines. Directing personnel and equipment to fight a fire using direct attack methods in these conditions raises the very real risk of loss of equipment, injury and loss of life due to the difficulty of traveling cross-country in loose sand.

Current fire management strategies, in both the Carlsbad and Roswell Field Offices, would continue unchanged in the Planning Area. See the 2004 Resource Management Plan Amendment for Fire and Fuels Management on Public Land in New Mexico and Texas.

Hazardous Materials

Current hazardous materials management strategies, in both the Carlsbad and Roswell Field Offices, would continue unchanged in the Planning Area. See the 1997 Carlsbad RMPA and the 1997 Roswell RMP.

Cultural Resources

Cultural inventory surveys would be required to identify cultural resources prior to surface disturbance through all alternatives. Eligible prehistoric and historic sites would continue to be either avoided or archeologically treated prior to surface disturbance. Unevaluated sites would either be avoided or tested to determine eligibility and if eligible, would be archeologically treated prior to surface disturbance. Cultural resources would be managed for information or interpretation or conservation with the majority of sites falling into the information category.

Paleontology

Protection of paleontological resources would follow through all alternatives. The required cultural inventory surveys would also identify exposed paleontological resources prior to surface disturbance through all alternatives. The geologic units or settings that have potential to produce fossils in planning area are the Quaternary outcrops shown on the Geologic Map of New Mexico 2003. Where fossil locations are known or where significant or important fossils are discovered, a qualified paleontologist would perform a literature and records search, conduct a field survey and report the findings prior to the BLM authorizing surface disturbance.

Recreation

Off-Highway Vehicles

To clarify the intent of the 1997 Roswell RMP and to bring the 1988 Carlsbad RMP up to date, within the Planning Area, motorized wheeled cross-country travel would be allowed for any military, fire, search and rescue, or law enforcement vehicle used for emergency purposes.

Disabled access would be allowed per the Rehabilitation Act of 1973. Under the Act, an individual with a disability will not, solely by reason of his or her disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity conducted by BLM. Disabled access per the Rehabilitation Act is considered at the local level on a case-by-case basis. Motorized wheelchairs, as defined in the Rehabilitation Act are not considered OHVs and therefore, would not be restricted by any of the alternatives.

The State of New Mexico Department of Game and Fish is the licensing authority for all persons including persons with disabilities who engage in hunting. Disabled hunters may have with them a person who is not disabled to assist them with the retrieval of harvested game animals.

There would be no exceptions that allow for cross-country travel for game retrieval on BLM managed land that have a limited or closed designation. This policy is consistent with all the National Forests in the State of New Mexico. Public land users who engage in hunting activity on public land managed by the BLM should consider this cross-country restriction prior to engaging in hunting activities on public land.

For OHV use, an existing road would be defined as an established road, built or maintained by equipment, which shows no evidence of ever having been closed to vehicular traffic by such means as berms, ripping, scarification, reseeding, fencing, gates, barricades or posted closures. A two-track road would be defined as void of vegetation in the tracks which shows use for other purposes, such as recreation, mining, logging, and ranching, and shows no evidence of ever having been closed to vehicular traffic by such means as berms, reseeding, gating, fencing or signing.

Livestock and wildlife trails do not meet these definitions and would not be authorized for use by motorized vehicles.

Motorized wheeled cross-country travel for lessees and permittees would be limited to the administration of a BLM lease or permit. Persons or corporations having such a permit or lease would be able to perform administrative functions on public land within the scope of the permit or lease. Lessees and permittees would not be allowed to drive cross-country for the purposes of hunting, fishing, recreation or other purposes not directly related to the administration of their Federal permit or lease.

The constraints mentioned above, however, would not preclude modifying permits or leases to limit motorized wheeled cross-country travel during further site-specific analysis to meet resource management objectives or standards and guidelines.

Some examples of administrative functions include, but are not limited to:

- Gas or electric utilities monitoring a utility corridor for safety conditions or normal maintenance,
- Accessing a remote communications site for normal maintenance or repair,
- Livestock permittees checking vegetative conditions, building or maintaining fences, delivering salt and supplements, moving livestock, checking wells or pipelines as part of the implementation of a grazing permit or lease,
- Scientific groups under contract or permit for resource assessments or research,
- Surveying that result in locating well sites, pads and access roads on Federal mineral leases,

- A no surface occupancy (NSO) requirement would be applied to all new oil and gas leases within the Mescalero Sands North Dune OHV Area.

Visual Resources

VRM classes remain unchanged throughout the Planning Area. Low profile tanks and structures would apply in Classes I and II. Under some visual conditions, low profile tanks and structures would be applied Class III. Painting stipulations from the Standard Environmental Color Chart and the Supplemental Environmental Color chart would apply.

Special Management Areas

The current designations for, SMAs would remain unchanged. The SMAs within the Planning Area are the Mathers RNA, Bear Grass Draw, the Laguna Plata Archeological District, the Maroon Cliffs Archeological District, and the Poco Site. (See Map A-1.) All current management prescriptions for these SMAs would be carried forward.

Environmental Justice

All residents, including low-income populations and Indian tribes, would receive equal notification of proposed actions authorized by BLM and ample opportunity to participate in BLM's planning process.

BEST MANAGEMENT PRACTICES

Best management practices (BMPs) would be used across all alternatives. BMPs are tools to be used in the effort to return areas that have had surface disturbance (such as drill pads and roads) to natural conditions. As BMPs are employed in this effort, they may continuously change over time due to the finding of more efficient or effective techniques and methods in surface

reclamation/restoration practices. For a description of these BMPs, see Appendix 5.

GENERAL DESCRIPTION OF EACH ALTERNATIVE

The following are short descriptions of the alternatives.

No Action Alternative

The No Action Alternative is current management as prescribed in the current land use plans (1988 Carlsbad RMP, as amended, and the 1997 Roswell RMP, as amended). This alternative serves as the baseline to which other alternatives are compared.

Alternative A

Alternative A is the portion of the Conservation Strategy that applies to public land and Federal minerals in the Planning Area. (See Appendix 2 and Map A-1.) This alternative establishes the concepts of Primary Population Area (PPA), Sparse & Scattered Population Area (SSPA), and Isolated Population Area (IPA) for the lesser prairie-chicken. This alternative has a Core Management Area (CMA) similar to Lesser Prairie-chicken Core Habitat Area established by the 1997 Roswell RMP.

The CMA in its entirety and occupied lesser prairie-chicken habitat in the PPA, SSPA and IPA would be closed to new leasing of Federal minerals until such time that the Special Status Species are no longer considered for listing as a threatened or endangered species by annual calculation. Under this alternative, about 18 percent of the total Federal mineral acreage in the Planning Area is closed to new leasing (see Table 2-1). If new leasing is considered, conditions would be attached that would preclude listing the special status species as threatened or endangered. Where deemed appropriate, exceptions to no new leasing may be allowed if habitat studies

show drilling and exploration would not impact habitats and to avoid potential drainage situations.

Featured also are 17 Habitat Evaluation Areas within the IPA. The Habitat Evaluation Areas would be closed to new oil and gas leasing until these areas can be evaluated. The target date for completing the evaluation is 2010. Depending on the results, unleased tracts would be either leased or remain closed to new leasing.

Alternative B (Preferred Alternative)

Alternative B adopts the concepts of Conservation Strategy in Alternative A and adds measures designed to provide greater protection of lesser prairie-chicken and sand dune lizard habitat. (See Map B-1). In this alternative, the Core Management Area (CMA) is larger than that of Alternative A since it incorporates occupied habitat of special status species as well as the Mescalero Sands ACEC. This alternative also retains the concepts of PPA, SSPA, and IPA for the lesser prairie-chicken as well as the 17 Habitat Evaluation Areas.

The CMA in its entirety and occupied lesser prairie-chicken habitat in the PPA, SSPA and IPA would be closed to new leasing of Federal minerals until such time that the special status species are not considered for listing as a threatened or endangered species. Under this alternative, about 19 percent of the total Federal mineral acreage in the Planning Area is closed to new leasing (see Table 2-1). In the future, if new leasing is considered, conditions would be attached that would preclude listing the special status species as threatened or endangered. Where deemed appropriate, exceptions to no new leasing may be allowed if habitat studies show drilling and exploration would not impact lesser prairie-chicken and/or sand dune lizard habitats and to avoid potential drainage situations.

The Habitat Evaluation Areas would be closed to new oil and gas leasing until these

areas can be evaluated. The target date for completing the evaluation is 2010, pending Bureau funding. Depending on the results, unleased tracts would be either offered for lease with appropriate stipulations or remain closed to new leasing. See Appendix F for evaluation criteria.

Efforts would be made to protect habitat for both species and minimize the impacts of oil and gas exploration, development and production in the Planning Area. This would include, but is not limited to; reducing the number of new drilling locations, decreasing the size of well pads, reducing the number and length of roads, reducing the number of new power lines and pipelines and implementing BMPs for development and reclamation.

In general, development of oil and gas resources on existing leases would continue. However, not every pro-ration unit (spacing unit) in every existing lease would necessarily be available for drilling or other surface disturbing activities. To protect occupied and suitable habitat, exploration and development of some existing leases would require off-site surface locations and directional drilling. Development of existing leases in the Planning Area that are completely within occupied or suitable habitat may require unorthodox surface locations or multiple wells from existing surface disturbance. In some cases, a lease or pro-ration unit may not be entirely within occupied or suitable habitat. Surveys would be conducted to demonstrate the acceptability of an on-lease surface location. Drilling and other surface disturbing activities would be allowed if the activities would not have a negative impact on adjacent occupied or suitable habitat.

Surface disturbing activities would not be authorized in occupied and suitable dune complexes to protect sand dune lizard habitat. For existing oil and gas leases within sand dune lizard habitat, a survey for occupied and or suitable habitat, by a qualified biologist approved by the BLM,

TABLE 2-1
MINERAL DESIGNATIONS OF FEDERAL MINERALS BY ALTERNATIVE

Alternative	Acres of Federal Minerals Closed to New Oil & Gas Leasing	Percent of Total Federal Minerals Closed to New Oil & Gas Leasing	Acres of Federal Minerals Open for New Leasing with NSO	Percent of Total Federal Minerals Open for New Leasing with NSO	Acres of Federal Minerals Open for New Leasing with Timing/Noise Stipulations	Percent of Federal Minerals Open for New Leasing with Timing/Noise Stipulations	Acres of Federal Minerals Open to New Leasing
No Action	11,173	1%	7,066	1%	287,357	25%	1,134,150
A	209,106	18%	23,639	2%	95,193	8%	936,217
B	221,456	19%	23,639	2%	79,863	7%	923,867
C	221,195	19%	8,000	2%	58,403	5%	924,128
D	120,851	11%	10,000	1%	126,748	11%	1,024,472
E	110,341	47%	6,451	1%	203,185	18%	126,890

Source: Pecos District Office Files, 2006.

would be required prior to authorization of further development. Based on survey results, BLM and the lease holder would work together to produce a plan of development to avoid occupied and suitable sand dune lizard habitats.

Alternative C

The zone concepts of Interim Management (see Appendix 1) and other prescriptions make up Alternative C (See Map C-1). Under this alternative, about 19 percent of the total Federal mineral acreage in the Planning Area is closed to new leasing (see Table 2-1). Zone 1 would be closed new oil and gas leasing. New oil and gas leasing would occur in Zone 2, but all new leases would have the NSO requirement. New oil and gas leasing in Zone 3 would require a plan of development prior to authorizing lease development and in key areas, an NSO stipulation would be applied. In Zone 4, all current management requirements authorized by existing land use plans would be applied. Regardless of the zone, no new oil and gas leasing would occur inside the Lizard Habitat Boundary shown on Map C-1.

Existing oil and gas leases in Zones 1, 2 and 3 would require an approved plan of development (POD) prior to approving the next application for permit to drill (APD)

Alternative D

Alternative D focuses on current occupied habitat for both species (See Map D-1). New oil and gas leasing or development restrictions and vegetative treatments would be applied only to occupied habitat. Under this alternative, about 11 percent of the total Federal mineral acreage in the Planning Area is closed to new leasing (see Table 2-1).

Alternative E

Alternative E would apply the suggestions for special management from the Lesser Prairie-chicken ACEC nomination (see Appendix 3 and Maps E-1, E-2 and E-3) received by BLM in December 2002. The special management measures would apply a 5-year moratorium on all livestock grazing and new oil and gas activities within the proposed ACEC south of U.S. Highway 380

as well as the two small portions of the proposed ACEC straddling U.S. Highway 70 (see Map E-1). Implementing the 5-year moratorium would require legislation.

Additionally, no drilling would be allowed within .09 miles of an active lek, within the proposed ACEC; and no new ROWs would be granted within 0.9 miles of an active lek within the proposed ACEC. Under this alternative, about 47 percent of the Federal mineral acreage in the proposed ACEC would be closed to new leasing (see Table 2-1).

The portion of the proposed ACEC laying between US Highways 70 and 380 would be designated as an Adaptive Management Area (see Map E-1). Experimental livestock grazing treatments in this area would include no grazing on at least one square mile within 1.5 miles of lek sites and light intensity grazing (after June 30) on at least one square mile within 1.5 miles of lek sites with a minimum of five lek sites used for each grazing treatment.

MANAGEMENT OBJECTIVES

This section describes the management objectives for each resource or program within the Planning Area.

Lands and Realty

The objective of Lands and Realty management is to protect habitat for the lesser prairie-chicken and sand dune lizard in the Planning Area and to permit land use applications not in conflict with protection of those habitats.

Fluid Minerals

The Fluid Minerals resource objective for this RMPA is to make Federal mineral resources available for leasing, exploration, and development in a manner that provides protection for the lesser prairie-chicken and sand dune lizard habitats.

BLM planning guidance for oil and gas leasing directs the agency to make land use plan decisions (such as this RMPA) at the following four levels:

- Lands open for leasing subject to existing laws, regulations, formal orders, and the conditions of the standard lease form;
- Lands open to leasing subject to moderate constraints such as seasonal and controlled surface use restrictions;
- Lands open to leasing subject to major constraints such as a No Surface Occupancy stipulations; and
- Lands closed to leasing. Lands closed to leasing are areas where it has been determined that other land uses or resource values cannot be adequately protected with even the most restrictive lease stipulations and appropriate protection can be ensured only by closing the lands to leasing.

Plan-level decisions, such as this RMPA, to open lands to leasing represents BLM's determination, based on the information available at the time, that it is appropriate to allow development consistent with the terms of the lease, laws, regulations, and orders, and subject to reasonable conditions of approval. When applying leasing restrictions, BLM guidance states the least restrictive constraint meeting the resource protection objective should be used.

Alternative Energy

BLM is directed to provide sites for alternative energy generating locations while considering the impacts to surrounding public land, resources and adjacent uses. This consideration includes protection of habitat for special status species.

Soils

The management objective is to prevent or avoid impairment of soil productivity due to

accelerated soil erosion and physical or chemical degradation resulting from surface use activities.

Water Resources

The management objective is to prevent or avoid impairment of water quality, both surface and subsurface, resulting from surface use activities.

Floodplains

The management objective is to prevent or avoid impairment of floodplain values resulting from surface use activities.

Air Quality

The management objective is to prevent or avoid impairment of air quality due to surface use activities.

Vegetation

The objective of vegetation management within the Planning Area is to meet the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing (New Mexico Standards for Public Land Health). This can be achieved by maintaining or improving vegetation that would move towards the desired plant community, with an emphasis on special status habitat protection/restoration, watershed protection, wildlife habitat, and a sustainable livestock industry. In the New Mexico Standards, habitat for special status species is evaluated within the Biotic Standard.

Non-Native and Invasive Species

The objective is to halt the spread of non-native and invasive plant species, monitor for the spread of these plants, and control or eliminate populations on public land.

Livestock Management

The intent of the livestock grazing management program is to create a sustainable forage base for the livestock industry, while meeting the New Mexico Standards for Public Land Health, protecting watershed health, and maintaining or improving habitat requirements for special status species.

Wildlife

The objective is to manage habitats on public land for the conservation and rehabilitation of wildlife, and plant resources consistent with multiple-use management principles, objectives and mandates.

Recreation

The objectives are to allow recreation within the Planning Area that would minimize impacts to special status species habitat and still provide for unique and quality recreation experiences for public land users.

Off-Highway Vehicle Management

The objective is to protect the habitats of special status species while providing adequate access for OHV use on public land suitable for OHV activity.

Visual Resources

Visual resource standards throughout the Planning Area would be maintained to ensure continuity of color, line, form, and contour of the surrounding landscape.

Special Management Areas

The objective is to manage ACECs and SMAs consistent with the management

prescriptions established in previous land use plans while providing protection, maintenance and enhancement of habitat for special status species.

PROGRAM MANAGEMENT PRESCRIPTIONS OF EACH ALTERNATIVE

This section details the management prescriptions and mitigations of each alternative.

No Action Alternative

Lands and Realty

BLM has identified public land suitable for disposal in Appendix 7 of the 1997 Roswell RMP. Criteria for acquisitions, found in Appendix 5 of the 1997 Roswell RMP, would be applied to potential acquisitions. Prairie-chicken Core Habitat Areas would be avoided when locating major ROWs (see Map A-1).

Minerals

Fluid Minerals

Timing and noise stipulations or condition of approvals for geophysical exploration operations, drilling for oil and gas, and other development would be enforced in lesser prairie-chicken habitat during the period of March 15 through June 15, each year from the hours of 3:00 am to 9:00 am. Additionally, no new drilling would be allowed within up to 200 meters of leks known at the time of permitting. Refer to Appendix 1 of the 1997 Roswell RMP and the 1997 Carlsbad RMPA for more discussion of these requirements.

In addition to any special stipulations, the development of new and existing leases would be further guided by the application of

the Pecos District Standard Conditions of Approval (Appendix 2 of both the 1997 Carlsbad RMP Amendment and the 1997 Roswell RMP).

Cultural sites determined to be eligible or potentially eligible to the National Register of Historic Places would be protected from damage by avoidance.

Potentially eligible sites would be tested to determine their eligibility. Mitigation, such as data recovery, would be required for eligible sites if avoidance could not be accomplished.

As a standard practice, ephemeral and perennial drainages and wetland/riparian areas would be avoided by oil and gas related facilities, including drilling locations, production facilities, roads, and pipelines. Whenever possible, facilities would be confined to existing alignments or locations, minimizing width requirements and maximizing multiple occupancy.

Lease notices would be used to alert lessees to potential special requirements on exploration, drilling or production. Examples include lease notices covering protection of potential cave or karst areas, protection of threatened or endangered or sensitive plant or animal species.

Solid Minerals

All lands would be open to mineral material disposals (sand and gravel), except those identified as not open to exploration and development designated as closed in the 1988 Carlsbad RMP and the 1997 Roswell RMP. Pertinent sections of the Pecos District Conditions of Approval (Appendix 2 of both the 1997 Carlsbad RMPA and 1997 Roswell RMP) would be applied to mineral material disposals.

TABLE 2-2 ACRES OF LEASED AND UNLEASED FEDERAL MINERALS IN PLANNING AREA			
COUNTY	LEASED FEDERAL MINERALS	UNLEASED FEDERAL MINERALS*	PERCENT LEASED BY COUNTY
Chaves	136,907	205,177	40%
Eddy	222,096	29,032	88%
Lea	407,834	44,643	96%
Roosevelt	58,509	41,125	59%
FIELD OFFICE	LEASED FEDERAL MINERALS	UNLEASED FEDERAL MINERALS	PERCENT LEASED BY OFFICE
Carlsbad	629,930	73,675	90%
Roswell	195,416	246,302	44%
Pecos District	825,346	319,977	72%
TOTAL FEDERAL MINERALS		1,145,323	
Source: Pecos District Office Files, 2006. Note: *Figures include 11,173 acres of Federal minerals closed to new leasing under current RMPs.			

Past history indicates public land in the Planning Area has never been mined for locatable minerals. While there have been claims staked in close proximity to the area to date, they have always proven to be purely speculative in nature. Numerous field examinations, geology, and mineral assays have indicated that there are likely no locatable minerals of commercial value in this area.

All public land would be open for the leasing of solid minerals, except for the land otherwise identified in the 1988 Carlsbad RMP and the 1997 Roswell RMP.

Alternative Energy

Neither the Carlsbad RMP nor the Roswell RMP address solar or wind energy. Management direction and planning guidance for solar energy are found in Instruction Memorandum (IM) No. 2005-006, Solar Energy Development Policy, and the Wind Energy Development

Programmatic Environmental Impact Statement.

The IM outlines current BLM policy, which is to facilitate environmentally responsible commercial development of solar energy projects. Commercial concentrated solar power or photo-voltaic generating facilities must, however, comply with BLM planning, environmental and current ROW application requirements, as do other similar commercial uses.

The 2005 National Wind Energy Development Programmatic EIS (www.windeis.anl.gov) evaluated the potential impacts associated with the proposed action to develop a Wind Energy Development Program, including the adoption of policies and BMPs. This Programmatic EIS amends BLM land use plans (including the 1988 Carlsbad RMP and the 1997 Roswell RMP) to address wind energy development.

As a programmatic evaluation, this EIS does not evaluate site-specific issues associated with individual wind energy development projects. A variety of location-specific factors and variations in project size and design would determine the magnitude of the impacts from individual projects. Therefore, based on current land use plans and program guidance, any proposal to locate either solar or wind energy generating facilities on public land would be evaluated on a case-by-case basis using the assessment criteria in current land use plans. A discussion of alternative energy potential can be found in Chapter 3.

Vegetation

Current management would continue as identified in each Field Office RMP. In the Roswell Field Office, these strategies would focus on moving towards the desired plant communities described in the 1997 Roswell RMP. In the Carlsbad Field Office,

management would focus on meeting the Natural Resources Conservation Service (NRCS) ecological site descriptions. Brush control would follow standard BLM stipulations and be implemented to achieve Standards for Rangeland Health. In the Roswell Field Office, no new treatments would be completed adjacent to an existing treatment until 5 years have passed.

Livestock

Current management would continue as identified in each Field Office RMP.

Wildlife including Special Status Species

Current management practices, prescriptions and stipulations implemented to protect wildlife habitat would continue as identified in current RMPs, including those regarding lesser prairie-chicken and oil and gas development.

Surface disturbance would not be allowed in documented occupied sand dune lizard habitat areas, or within up to 100 meters of suitable habitat associated with occupied habitat areas identified through field review. An exception to this restriction would be considered when an on-site evaluation of habitat extent, available species occurrence data, the proposed surface use, and proposed mitigations indicate the proposal would not adversely affect the local population.

All other wildlife management prescriptions would be the same as those found in Management Common to All Alternatives.

Recreation

Management prescriptions would continue throughout the Planning Area with no change. These prescriptions include:

- The recreation opportunity spectrum (ROS) defines the Planning Area as rural and natural (see Glossary). Recreation opportunity would be

managed so that opportunities categorized by the ROS would be maintained. No management actions are proposed that would improve or degrade recreation opportunity to the extent that a change in any ROS category would result. Existing ROS classes are discussed in the Glossary.

- In the Planning Area, the objective of the interpretive program would be to assist visitors in developing awareness, appreciation and understanding of the areas they visit. The second objective would be to encourage thoughtful use of the natural resources available in the area to reduce impacts on natural resources. The final objective would be to promote a public understanding of BLM goals and objectives. The main emphasis for interpretation would be placed on the Mescalero Sands North Dune OHV Area, and the Hackberry Lake Intensive ORV Area. Tools used to accomplish these objectives may include: interpretive trails, exhibits, literature, waysides, environmental education, special populations programs, visitor and information stations, auto tours, campfire talks and guided walks.
- The SRMAs within the Planning Area are the Mescalero Sands North Dune OHV Area, the Mescalero Sands ACEC, and the Hackberry Lake Intensive ORV Area. See Map NAA-1 for locations of these areas. Areas outside SRMAs would be managed as extensive recreation management areas where only custodial management action would be taken to maintain a rural and natural condition.

Off-Highway Vehicle

Current management would continue as identified in each Field Office RMPs which includes the following:

- In the Roswell portion of the Planning Area inventories, public review, and transportation planning would be conducted to support road by road designations for roads and trails suitable for OHV use. All roads and trails not otherwise categorized would be limited to existing roads and trails for OHV use. Pending completion of formal designations, all roads and trails would be managed as limited to existing roads and trails for OHV use.
- The Mescalero Sands North Dune OHV Area would remain designated as open to OHV use and would be enlarged to approximately 1,674 acres per the decision in the 1997 Roswell RMP. Within this expansion area, an area of about 400 acres south of U.S. Highway 380 between the highway and the OHV area would be used as an entrance corridor to the area. Upgrades and development could include interpretive and safety displays with emphasis on the National Tread Lightly Program, sun shelters, rest rooms, campground host site, potable water, and boundary signing. Livestock would be fenced-out from about 20 acres around existing and planned developments.
- In the Carlsbad portion of the Planning Area, public land is designated as open to OHV use. Off-road vehicle designations in the Carlsbad Field Office are shown on Map 2-6 of the 1988 Carlsbad RMP.
- The Hackberry Lake Intensive OHV Area would remain designated as open to OHV use.

Special Management Areas

The current designations for ACECs would remain unchanged. The only ACEC in the Planning Area is the Mescalero Sands ACEC. (See Map A-1.) All current management prescriptions for the ACEC would be carried forward.

Alternative A

This alternative is based on the Conservation Strategy. This alternative takes the concepts from the Conservation Strategy and applies them to public land and Federal minerals. It does not include conservation strategies applicable to State trust or private lands. The entire Conservation Strategy is included in Appendix 2.

Lands and Realty

This alternative is the same as the No Action Alternative with the following differences:

- There would be a priority on exchanges (surface and minerals) with the State Land Office within the CMA. BLM has previously identified public land suitable for disposal in Appendix 7 of the 1997 Roswell RMP and on Map 2-1 of the 1988 Carlsbad RMP. Approximately 22,000 acres of State Trust land within the CMA would be considered for acquisition. Criteria for acquisitions, found in Appendix 5 of the 1997 Roswell RMP, would be applied to potential acquisitions.
- Pursuant to Strategy 3.2 of the Conservation Strategy, should an opportunity arise the BLM would consider acquisition of private land in the Planning Area for special status species habitat from willing sellers. The purpose of such possible acquisitions would be to establish habitat reserves. Criteria for acquisitions, found in Appendix 5 of the 1997 Roswell RMP, would be applied to potential acquisitions regardless of their location in the Planning Area. In addition to the management prescriptions in Appendix 2, lands acquired for special status species habitat would be added to the right-of-way exclusion area for major projects. Acquisition, in the public interest, would

be acquired via exchange, purchase (of land and easements), and donation.

- To support acquisitions described in the previous paragraph, land in the Pecos District previously identified as suitable for disposal would be made available for sale under the Federal Land Transaction Facilitation Act of 2000 (sometimes known as the Baca Bill). The only exception to this land is the public land in Roosevelt County identified in Appendix 7 of the 1997 Roswell RMP. This land, totaling approximately 3,151 acres, would be retained for lesser prairie-chicken habitat.
- The CMA would be designated as a ROW avoidance area. The Mescalero Sands ACEC and the Mathers RNA would continue to be ROW exclusion areas. The Laguna Plata Archeological District, the Maroon Cliffs Archeological District, and the Mescalero Sands North Dune OHV Area would continue to be ROW avoidance areas.
- ROWs for projects and facilities such as fences, range and wildlife water pipelines, power distribution lines, access to oil and gas facilities, or oil and gas collection or distribution pipelines would be considered in avoidance zones on a case-by-case basis.

Minerals

Fluid Minerals

The Conservation Strategy divides the Planning Area into four categories: the Core Management Area (CMA), the Primary Population Area (PPA), the Sparse and Scattered Population Area (SSPA), and the Isolated Population Area (IPA). Included in the IPA are 17 Habitat Evaluation Areas. See Map A-1 for locations of these areas.

The Conservation Strategy states that new oil and gas leasing would be deferred in some situations. BLM planning regulations

reserve the use of the term "deferred" for those situations in which a resource or management decision is delayed until some future action (also governed by a decision) is completed. Where the Conservation Strategy uses the term "deferred" BLM has used the term "closed" to new oil and gas leasing.

Timing and noise stipulations would be the same as the No Action Alternative for the CMA. In the PPA, SSPA and IPA the timing and noise stipulation would be maintained only as needed. These stipulations are intended to prevent disruption of lesser prairie-chicken leking and nesting by activities associated with energy exploration and development. Stipulations should be imposed only in areas where lesser prairie-chicken are present, as indicated by sightings or survey reports within a period of 2 years. Exceptions may be granted on a case-by-case basis. In areas where adequate surveys over 2 years have not detected lesser prairie-chicken, stipulations should be waived. They should be re-applied if lesser prairie-chicken re-appear. Note that some areas that may be important to lesser prairie-chicken recovery may already be receiving management protection under guidelines adopted for the sand dune lizard.

Core Management Area – New Oil and Gas Leasing

As shown by Table 2-3, the CMA comprises about 14 percent of the total Federal mineral acreage in the Planning Area. About 74 percent of the Federal mineral acreage in the CMA is unleased. The CMA would be closed to new leasing for the life of this plan amendment. Under this alternative, the unleased (closed) area of the CMA equals about 10 percent of the total Federal mineral acreage in the Planning Area. Certain exceptions would be granted on a limited, case-by-case basis. This would include the presence of existing infrastructure, or as needed for pooling or drainage protection purposes, or for parcels

a minimum of one mile from suitable lesser prairie-chicken habitat. Exceptions would be subject to other applicable regulatory and environmental compliance requirements.

Core Management Area – Existing Oil and Gas Leases

For existing leases, Plans of Development (PODs) and appropriate Conditions of Approval (COAs) would be required to ensure orderly development with a minimum of surface impact in lesser prairie-chicken habitat. PODs may not be required for every existing lease on the Planning Area, but are required when requested by the BLM. Included in PODs and COAs would be specifications for various strategies for minimizing impacts associated with new development and for reclaiming developed areas. The purpose of a POD is to require planning by the operator and BLM to ensure orderly development as a means to reduce or eliminate impacts to special status species habitat. A POD would incorporate applicable BMPs (see Appendix 5) and disclose to the fullest extent possible all future well locations; the location and arrangement of well infrastructure (e. g., tank batteries, compressors, power lines and poles); road locations; and ROWs.

Primary Population Area

The Conservation Strategy adopted, with some modifications, the Robel impact distances in mapping and calculating the extent of habitat available to lesser prairie-chicken. Distances used in the calculation of habitat impacts surrounding different development features are shown in Table 2-4. These distances are used to evaluate impacts of potential projects and were applied to existing infrastructure as part of the definition of suitable and potentially suitable lesser prairie-chicken habitat (see page 50 of Appendix 2, the Conservation Strategy for a discussion of Robel impact radii).

Areas designated as occupied, suitable and potentially suitable habitat are shown on Map 4 of the Conservation Strategy (Appendix 2).

Table 2-5 shows the unleased mineral acreage by habitat type in the PPA of Alternatives A and B.

Primary Population Area – New Oil and Gas Leasing

As shown by Table 2-3, the PPA comprises about 17 percent of the total Federal mineral acreage in the Planning Area. About 47 percent of the Federal mineral acreage in the PPA is unleased. Areas designated as occupied or suitable lesser prairie-chicken habitat (see page 51 of

Appendix 2) would be closed to new leasing. Under this alternative, the unleased (closed) area of the PPA equals about 8 percent of the total Federal mineral acreage in the Planning Area. Certain exceptions would be considered on a limited, case-by-case basis when indicated due to presence of existing infrastructure, or as needed for pooling or drainage protection purposes; and if leasing and subsequent development would not impact habitat. In these cases, a NSO stipulation would be applied to the occupied or suitable portions of the lease.

New oil and gas leasing in occupied and suitable lesser prairie-chicken habitat would be allowed in the future if, (1) by annual recalculation, there is demonstrated a net increase in the sum of suitable and occupied habitat in the PPA and (2) there is a statistically significant increase in lesser prairie-chicken population Statewide over the previous 5 years. If new leases are offered in occupied or suitable habitat as a result of recalculation, conditions would be attached that would preclude listing the special status species as threatened or endangered.

TABLE 2-3 ALTERNATIVE A, ACRES OF LEASED AND UNLEASED FEDERAL MINERALS							
Management Area	Acres of Leased Federal Minerals	Percent Leased Federal Minerals	Acres of Unleased Federal Minerals	Percent Unleased Federal Minerals	Total Federal Mineral Acres	Comparison of Federal Mineral Acreage to Total Federal Mineral Acreage in the Planning Area	Comparison of Unleased Acres to Total Federal Mineral Acreage in the Planning Area
Core Management Area	40,180	26%	115,949	74%	156,129	14%	(closed)10%
Primary Population Area	105,641	53%	93,157	47%	198,798	17%	(closed) 8%
Sparse & Scattered Population Area	81,572	56%	64,130	44%	145,702	13%	6%
Isolated Population Area	597,953	93%	46,741	7%	644,694	56%	4%
Totals	825,346	72%	319,977	28%	1,145,323	100%	28%
SOURCE: Pecos District Office Files, 2006							

Areas designated as potentially suitable lesser prairie-chicken habitat would be available for new oil and gas leasing. If leasing and development in these areas would impact suitable habitat, then areas designated as potentially suitable habitat would be closed to new oil and gas leasing. Areas of potentially suitable habitat where lands can be used to "block up" larger surrounding areas of suitable habitat would also be closed to new leasing. If, in the future, there is demonstrated a net increase in the sum of suitable and occupied habitat in the PPA and there is a statistically significant increase in lesser prairie-chicken population statewide over the previous 5 years, then BLM would consider new oil and gas leasing in areas designated as potentially suitable habitat that had been closed to new leasing as described in this paragraph. If new leases are offered, conditions would be attached that would preclude listing the special status species as threatened or endangered.

TABLE 2-4 ROBEL IMPACT DISTANCES	
DISTURBANCE	IMPACT RADIUS
Oil or gas wellheads	.1 mile
Sand/dirt 2-track roads	0
Caliche roads, oil field access roads	.1 mile
Paved roads	.5 mile
Compressor stations	.75 mile
Houses	.5 mile
Power lines	.25 mile
Center-pivot fields	.25 mile
SOURCE: Pecos District Office Files, 2006	

Federal minerals within the State Game Commission-owned Prairie-chicken Area would be closed to new oil and gas leasing. For pooling purposes or drainage protection, new leasing with a NSO stipulation may be allowed within a Prairie-chicken Area provided exploration and development does not impact suitable habitat. BLM would consider opening the Prairie-chicken Area to oil and gas leasing when the special status species are not

TABLE 2-5 UNLEASED FEDERAL MINERALS IN THE PRIMARY POPULATION AREA, ALTERNATIVES A AND B		
HABITAT CATEGORY	ACRES OF UNLEASED FEDERAL MINERALS	PERCENTAGE OF UNLEASED FEDERAL MINERALS IN THE PPA
Occupied	70,799	76%
Suitable	13,974	15%
Potentially Suitable	2,795	3%
Unsuitable	5,589	6%
TOTAL	93,157	100%
SOURCE: Pecos District Office, 2006		

considered for listing as a threatened or endangered species.

New oil and gas leasing would be allowed in areas designated as unsuitable habitat unless development in unsuitable lesser prairie-chicken habitat or potentially suitable lesser prairie-chicken habitat would extend an impact/avoidance zone into suitable lesser prairie-chicken habitat. BLM would determine if habitat is suitable or unsuitable prior to issuing a new oil and gas lease.

Unsuitable habitat would be open to new oil and gas leasing subject to standard lease terms.

Primary Population Area – Existing Oil and Gas Leases

For existing leases, PODs would be required when requested by the BLM. Subsequent COAs would also be required. Included in PODs and COAs would be specifications for various strategies for minimizing impacts associated with new development and for reclaiming disturbed areas. A POD would incorporate applicable BMPs and disclose all future well locations; the location and arrangement of well infrastructure (e. g., tank batteries, compressors, power lines and poles); road locations; and ROWs.

Sparse and Scattered Population Area – New Oil and Gas Leasing

As shown by Table 2-3, the SSPA comprises about 13 percent of the total Federal mineral acreage in the Planning Area. About 44 percent of the Federal mineral acreage in the SSPA is unleased. Occupied lesser prairie-chicken habitat (within 1.5 miles of the lek) would be closed to new leasing. New leasing with a NSO requirement may be allowed, where this is determined to be appropriate, i.e., pooling or drainage protection that does not impact suitable habitat. In the future, new leasing in occupied lesser prairie-chicken habitat would be linked to the status of the species or habitat in New Mexico, as identified in the annual USFWS candidate notice of review or other periodic agency review. If new leasing is considered, conditions would be attached that would preclude listing the special status species as threatened or endangered.

Sparse and Scattered Population Area – Existing Oil and Gas Leases

For existing leases, PODs would be required when requested by the BLM. Subsequent COAs would also be required as described for the Primary Population Area section above. Timing and noise stipulations would also be the same as described in the Primary Population Area section above.

Isolated Population Area – New Oil and Gas Leasing

As shown by Table 2-3, the IPA comprises about 56 percent of the total Federal mineral acreage in the Planning Area. About 7 percent of the Federal mineral acreage in the IPA is unleased. Occupied lesser prairie-chicken habitat (e.g. within 1.5 miles from an active lek) would be closed to new leasing. New leasing with a NSO

requirement may be allowed, where this is determined to be appropriate. In the future, new leasing in occupied lesser prairie-chicken habitat would be linked to the status of the species or habitat in New Mexico, as identified in the annual FWS candidate notice of review or other periodic agency review. If new leasing is considered, conditions would be attached that would preclude listing the special status species as threatened or endangered.

Isolated Population Area – Existing Oil and Gas Leases

For existing leases, PODs would be required when requested by BLM. Subsequent COAs would also be required as described for the Primary Population Area section above.

Isolated Population Area – Habitat Evaluation Areas

Habitat suitability analyses would be conducted in the 17 Habitat Evaluation Areas (see Map A-1) within the IPA. These areas would be prioritized for reclamation potential, and for potential to maintain re-established lesser prairie-chicken

populations. Until the evaluation of an area is complete, leasing in these areas is deferred. Criteria for continuing this closure or making these areas available for lease can be found in Appendix 8. Areas determined to be lacking high conservation value would be managed according to the IPA prescription.

Sand Dune Lizard

Throughout the Planning Area, the following measures would be taken to protect sand dune lizard habitat:

- New well pads would not be located in dune areas within occupied or suitable habitat, or within 100 meters of such dune areas. Proposed well site locations in dune areas would be moved to adjacent shinnery oak flats. Where dune complexes containing occupied or suitable habitat are larger than 5 acres and there are compelling reasons which cannot be mitigated, new pads would be located on the periphery of the dune complex.
- Construction of well pads within complexes of suitable habitat would be

**TABLE 2-6
ALTERNATIVE B, ACRES OF LEASED AND UNLEASED FEDERAL MINERALS**

Management Area	Acres of Leased Federal Minerals	Percent Leased Federal Minerals	Acres of Unleased Federal Minerals	Percent Unleased Federal Minerals	Total Federal Mineral Acres	Comparison of Federal Mineral Acreage to Total Federal Mineral Acreage in the Planning Area	Comparison of Unleased Federal Mineral Acres to Total Federal Mineral Acreage in the Planning Area
Core Management Area	43,338	25%	128,299	75%	171,637	15%	(closed) 11%
Primary Population Area	105,641	53%	93,157	47%	198,798	17%	(closed) 8%
Sparse & Scattered Population Area	78,414	60%	51,780	40%	130,194	11%	5%
Isolated Population Area	597,953	93%	46,741	7%	644,694	56%	4%
Totals	825,346	72%	319,977	28%	1,145,323	100%	28%

SOURCE: Pecos District Office Files, 2006

limited to a total of 13 well pads per square mile. (See page 99 of Appendix 2 for a further discussion of this issue.)

- Opportunities to drill multiple wells from one pad would take precedence over new pad construction in occupied or suitable habitat. If new construction is unavoidable, pad size in occupied or suitable habitat would be kept to a minimum.
- Abandoned well pads and the caliche roads that serve these wells would be cleaned of caliche, raked, contoured, and reclaimed. All out-of-service roads in occupied and suitable sand dune lizard habitat would be reclaimed and closed to vehicle use, pending consultation with grazing permittees. However, in certain instances based upon a site evaluation, abandoned well pads and out-of-service roads may not need to be reseeded in sand dune areas because it may be determined that there is not an adverse effect to the sand dune lizard.
- Conduct research to determine if selective site-specific planning of infrastructure within dune complexes can minimize development impacts such that the 13 well pads per square mile limitation could be increased. (See page 99 of Appendix 2 for a further discussion of this issue.)
- The repetitive use (more than once every 5 years) of thumper trucks for seismic exploration would be avoided unless poor results or new technology dictate new seismic surveys are needed. Thumper trucks would avoid dune complexes when feasible.

Mineral Materials

In the CMA and the PPA, no new mineral material sites would be authorized in occupied or suitable prairie-chicken habitat. In the SSPA, no mineral material sites

would be authorized in occupied prairie-chicken habitat. In the IPA, no new mineral material sites would be authorized within 1.5 miles of an active lek.

Alternative Energy

With regards to authorizing commercial solar or wind energy sites within the Planning Area, Alternative A would be the same as the No Action Alternative.

Vegetation

A number of different shrub land and grassland vegetation types with a shinnery oak or sand sage component are considered habitat for lesser prairie-chickens. Suitable vegetation exists across the historical range of the species, wherever rangeland has not been highly altered or converted to other uses. Plant community characteristics of suitable or potential lesser prairie-chicken habitat can be described using the system of ecological site descriptions developed by U.S. Department of Agriculture, NRCS. The following NRCS ecological site descriptions vary slightly in plant composition, but share a common set of vegetative characteristics considered necessary for lesser prairie-chicken habitat: Deep Sand CP-2, SD-3 & HP-3, Sandhills CP-2, SD-3, & HP-3, Sandy Plains CP-2 & HP-3, and Loamy Sand SD-3 & HP-3.

The Conservation Strategy standard for plant composition and grass height describes high quality habitat (see Appendix 2) within the sand shinnery and sand sage-grassland ecosystems. Under this alternative, the Strategy's vegetative objective for vegetation cover and composition in quality lesser prairie-chicken habitat would have an average canopy cover of 30 to 50 percent grasses, 25 to 40 percent shrubs, and 3 to 10 percent forbs; with no more than 42 percent bare ground and litter. Areas that fail to meet these conditions should not necessarily be considered unsuitable for lesser prairie-chickens. In some areas populations persist

in habitat of poor or marginal quality, and these areas should be considered of great conservation importance. In these locations, survival and recruitment are likely to be increased if habitat conditions are improved to meet vegetative standards. In areas where populations have disappeared due to deterioration or elimination of high quality habitat, long-term recovery may be needed to meet habitat goals. In such areas, the focus of management should be on maintaining consistent progress towards meeting the vegetative standards.

In some locations, competition from shrub invasion impedes restoration of grasses and forbs needed for lesser prairie-chicken nesting and brood rearing. When this occurs, limited use of chemical treatment could help achieve the vegetative standards for quality habitat described above.

Chemical control would target, but not be limited to, mesquite and shinnery oak. The Roswell Field Office requirement, that no new treatments completed adjacent to an existing treatment until 5 years have passed, would be dropped.

On public land, BLM personnel would identify priority areas for control projects and carry out treatments in coordination with other interested agencies and permittees. Mechanical and chemical treatment would be used in accordance with BLM standards and specifications for brush management, as outlined in the Draft EIS for Vegetation Treatment on BLM Lands in Thirteen Western States, BLM Manual 9011 (Chemical Pest Control), and BLM Manual 9015 (Integrated Weed Management). NRCS ecological site descriptions provide plant communities for sites based on soil type. These site descriptions describe the potential vegetative composition that the treatments are designed to achieve.

Mesquite control may be carried out in concert with other efforts to enhance rangeland management for both grazing management and successful lesser prairie-chicken recruitment. While mesquite is one of the predominant shrubs affecting the

health and habitat quality of rangelands in southeast New Mexico, consideration also should be given to control of cholla, catclaw, or other shrubs where such actions may increase rangeland productivity and alleviate pressure on lesser prairie-chicken nesting and brood-rearing habitat.

In the past, standing dead materials have been allowed to fall naturally. This usually takes 3-5 years. This practice would continue, as there are no current plans to remove standing dead materials, either by mechanical means or prescribed fire. In the future, should it be deemed necessary to remove these materials before they fall naturally, the use of mechanical means or prescribed fire may be considered. Potential impacts of these actions would be addressed in project specific Environmental Assessments.

The following guidelines for chemical treatment of shinnery oak would be followed. Adherence to these guidelines should be emphasized as part of the overall rangeland management strategy for lesser prairie-chicken and sand dune lizard habitat.

- Treatment with herbicides is recommended only when habitat goals cannot be achieved by other means, such as grazing system management.
- Given the condition stated above, treatment of shinnery oak is recommended when necessary to achieve vegetative standards for plant composition and canopy cover—for example, when shinnery oak cover still exceeds guidelines after grazing management has been applied.
- In conducting such treatments, the goal should be to temporarily reduce shinnery oak competition with grasses, allowing grass cover to increase naturally. Herbicides should be used at dosages that would set

back (defoliate) shinnery oak, not kill it.

- Large block and linear application should be avoided. Instead, application should follow natural patterns on the landscape such that only patches needing treatment are treated.
- Herbicide treatment should never be applied in dune areas and corridors between dune complexes.
- Herbicide treatment should not be applied around large oak motts, and within 1.5 miles of active lek sites where lesser prairie-chicken numbers are large or increasing.
- Post-treatment grazing management is essential to success. Grazing would be deferred for at least two growing seasons after treatment. Grazing after that time may be allowed only if progress towards meeting vegetative standards is being made. Longer periods of rest may be required in some cases, especially during drought conditions.
- Tebuthiuron treatments for shinnery oak control within 500 meters of occupied or suitable habitat for sand dune lizard would not be allowed.
- Proposals for shinnery oak treatments with non-tebuthiuron herbicides or defoliant within 500 meters of occupied or suitable habitat would be reviewed by the sand dune lizard research team (biologists from NMDGF, BLM, or other relevant agencies).
- Sand dune lizard dispersal corridors of untreated shinnery oak flats at least 500 meters wide should be retained between suitable habitats, both occupied and unoccupied, that

are separated by less than 2000 meters. See Figure 2-1.

Livestock Management

The prescriptions of this alternative would be applied to public land leased or permitted for livestock grazing by BLM. Grazing is not considered to be incompatible with healthy rangelands, and in fact may be an important tool in managing for lesser prairie-chicken species protection and recovery. A central challenge however is to ensure that, in areas where lesser prairie-chicken leks are present, grazing occurs in a manner that allows suitable nesting and brood-rearing habitat to be maintained. An equal challenge is to achieve these safeguards for lesser prairie-chicken habitat without negatively impacting the economic interests of ranchers and ranching communities.

Grazing would be maintained at a level consistent with the seasonal nesting and brood-rearing habitat requirements of the lesser prairie-chicken, as defined by vegetative objectives stated in the Vegetation section of this chapter. Ranch operators voluntarily participating in a conservation program would agree to meet these standards through the adoption of a suitable grazing program for their land or lease allotment. Such a program may involve an overall reduction in AUMs or acreage grazed, modification of fences and water sources, implementation of a more conservative, deferred or rotational grazing system that rests breeding areas to ensure adequate residual grass cover for nesting, and other related changes in management.

Participating in a conservation program would allow ranch operators to receive fair compensation for costs associated with reductions in AUMs, building range improvements, or changing grazing practices. While the BLM has no such program currently, funding may be provided by various private, State, or Federally-sponsored funding programs, such as the Environmental Quality Incentives Program

(EQIP), the Wildlife Habitat Incentives Program (WHIP), the Grassland Reserve Program (GRP), and various wildlife habitat programs administered by the FWS and the NMDGF. These types of programs may offset some of the costs incurred when participating in a conservation program.

Under this alternative, approximately 1.85 million acres, which includes about 850,000 acres of public land and makes up all or parts of 114 grazing allotments, would continue to be available for livestock use.

Currently, a total of 192,125 AUMs are permitted either by grazing permit or grazing lease. Any adjustments to a permit or lease, whether an increase or a decrease, would be made based on monitoring data, Standards Assessments, and through consultation, as discussed in 43 CFR 4100. Adjustments may include changing the kind and class of livestock, season of use, number of livestock, or grazing patterns. Actual use varies from year-to-year due to adjustments of annual stocking rates and other management practices. These annual adjustments are made at the grazing permittee/lessee's request. The permittee/lessee may reduce livestock numbers due to drought, market conditions, or other reasons; or may ask for a temporary increase if good rainfall and corresponding forage production has occurred.

While the current grazing regulations (43 CFR 4100) provide flexibility and wide latitude to improve and maintain rangeland health, voluntary relinquishment would be one method to meet the goal of establishing habitat reserves for the lesser prairie-chicken within the Planning Area. Under this alternative, the decision to relinquish livestock grazing is totally voluntary on the part of the permittee/lessee. If a grazing permittee/lessee decides to voluntarily relinquish grazing on his/her allotment to resolve conflicts that exist between livestock grazing and protection of lesser prairie-chicken habitat, BLM would close the

allotment to livestock grazing. This allotment closure would continue for the life of the current permit or lease, would be re-evaluated each time the permit/lease is transferred or renewed, and may or may not continue when the plan is revised.

The criterion for BLM to accept a voluntary relinquishment and to close the allotment to grazing is that conflicts exist between livestock grazing and protection of lesser prairie-chicken habitat.

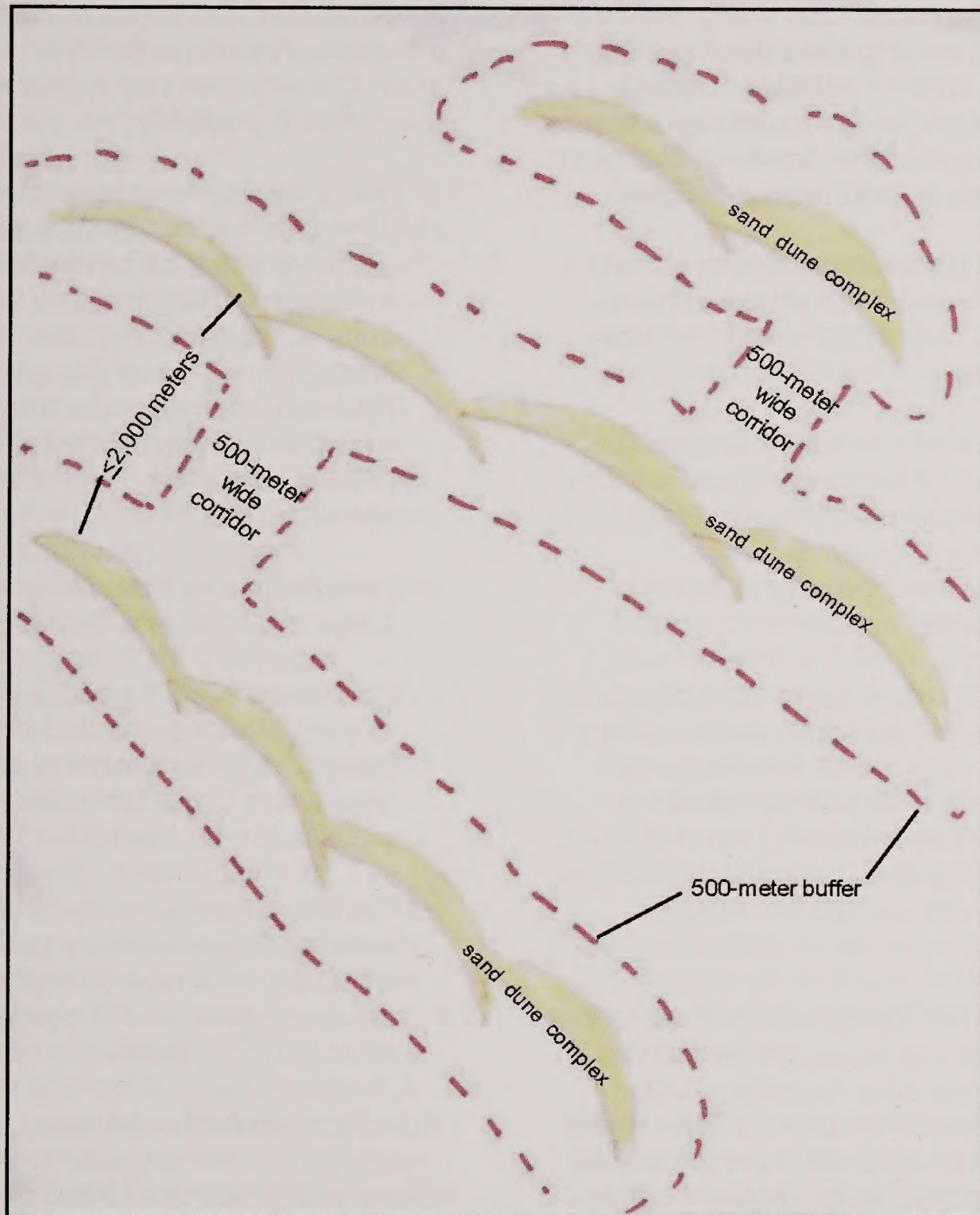
Current management (see Management Common to All Alternatives, Vegetation and Livestock Grazing sections of this chapter) describes how BLM evaluates vegetation and rangeland health. When conflicts arise BLM works in coordination and cooperation with grazing permittee/lessee to reduce these conflicts by modifying uses (grazing plans, grazing patterns, and other uses), installing projects (brush control, fences, water pipelines), or actions as necessary. As stated in the previous paragraph, temporary adjustments can be made based on monitoring data.

Grazing would be deferred for at least two growing seasons after treatment. Grazing after that time would be allowed only if progress towards meeting vegetative standards is being made. Longer periods of growing season deferment would be required in some cases, especially during drought conditions.

Wildlife including Special Status Species

The most direct and effective means of improving the population status of lesser prairie-chicken and sand dune lizards in New Mexico is to enhance characteristics of rangeland habitat needed for successful breeding and juvenile recruitment. The Conservation Strategy focuses on improving the quality of suitable and potentially suitable habitat for breeding, nesting, and

Figure 2-1. Vegetation treatment buffers and dispersal corridors for occupied and suitable sand dune lizard habitat. Not drawn to scale.



brood rearing, in areas around current and historic lek sites.

Under this alternative, most of the wildlife habitat needs or prescriptions are identified in other resource programs. Therefore refer to the minerals, livestock grazing, vegetation, recreation, realty, and OHV for guidelines addressing sand dune lizard and lesser prairie-chicken habitats. Current surface and occupancy requirements except those referring to lesser prairie-chicken and sand dune lizard would remain in place.

Management prescriptions tied to general wildlife habitat would remain the same as the No Action Alternative except for those identified below:

- Research and monitoring to evaluate success of reclamation efforts for those projects designed to improve habitat is needed. See Appendix 6 for a description of monitoring of lesser prairie-chicken habitat.
- BLM would also support the propagation of lesser prairie-chicken and transplant efforts throughout the Planning Area, with an emphasis that the habitat parameters necessary for survival would be in place prior to reintroduction unless identified and needed for research projects.
- New areas or combinations of areas that can function as lesser prairie-chicken reserves and sites for reintroduction would be established in the IPA. These should be located within predominantly suitable habitat areas large enough to support viable lesser prairie-chicken populations and meet other criteria specified in Appendix 8. The Waste Isolation Pilot Plant (WIPP) site would serve as the location of one such reserve. Potash enclaves and private land that may be available from willing sellers would be considered as a second possible reserve location.

Recreation

Same as the No Action Alternative.

Off-Highway Vehicle Management

This alternative adopts the prescriptions of the No Action Alternative with the following differences based on the recommendations found in the Conservation Strategy (Appendix 2, page 79):

- Within the Planning Area, inventories, public review, and transportation planning would be conducted to support road-by-road designations for roads and trails suitable for OHV use. Pending completion of formal designations, the Planning Area would be managed as limited to existing roads and trails for OHV use. A preliminary road network is shown on Map R-1.
- Designations within established OHV areas would remain unchanged.
- BLM would evaluate adequacy of existing designations and access management for each key area. A key area refers to the CMA and habitat suitable for the sand dune lizard.
- The Mescalero Sands North Dune OHV Area would remain at its current size of 562 acres. No new off highway vehicle areas would be established although the need may be identified.

Special Management Areas

Same as the No Action Alternative.

Alternative B (Preferred Alternative)

This alternative adopts the concepts of the Conservation Strategy in Alternative A and adds measures designed to provide greater protection of lesser prairie-chicken and sand dune lizard habitat.

Lands and Realty

This alternative is similar to Alternative A with the following differences and additions:

The BLM would consider acquisition of land in the Planning Area for special status species habitat when the opportunity arises from willing sellers. Acquisitions would be acquired via exchange, purchase of land and easements, and donation if they:

- Improve management of natural resources through consolidation of BLM, State, and other Federal lands where agencies have compatible land management missions;
- Secure property necessary to protect special status species, promote biological diversity, enhance wildlife habitat, provide access to public waters and public land, and preserve archaeological and historical resources;
- Criteria for acquisitions, found in Appendix 5 of the 1997 Roswell RMP, would be applied to potential acquisitions regardless of their location in the Planning Area.

In order to provide opportunities for expansion of lesser prairie-chicken habitat within the Planning Area and to reduce the impacts of electric power lines, applicants for electric power lines could participate in a power line removal credit (PLRC). Under this program applicants could remove 1.5 miles of idle power lines (wire and poles) within prairie-chicken habitat management unit (CMA, PPA, SSPA and IPA) and habitat type (occupied or suitable/potentially suitable) before receiving authorization to construct 1.0 mile of new power line. Appendix 6, Monitoring and Implementation, contains the details of the implementation of the PLRC program. The PLRC program would not be applicable in unsuitable habitat, regardless of the management unit (CMA, PPA, SSPA and IPA).

Other mitigation measures that would be considered include, but are not limited to, those shown below. These mitigation measures are ranked in order of effectiveness of reducing impacts from power lines:

- Burying new distribution power lines within 2 miles of occupied lesser prairie-chicken habitat (measured from the lek) and in suitable lesser prairie-chicken habitat within 2 miles of an active lek. See Table 2-4, Robel Impact Distances.
- Using internal combustion engines to power equipment at the well. Such engines would be muffled to 75 db measured at 30 feet from the source.
- Constructing new power lines in locations which avoid occupied and suitable lesser prairie-chicken habitat.
- In cases where overhead power lines already exist in occupied or suitable lesser prairie-chicken habitat, new power lines could be constructed immediately adjacent to an existing line but only to the extent of the existing overhead power lines. Where sections of the new power line cannot follow the existing line, it would have to be buried.
- Constructing all infrastructure supporting development of a well (including roads, power lines and pipelines) within the same corridor.

Within sand dune lizard habitat (see Map B-1), new surface disturbance in dune complexes would not be authorized. Exceptions to this requirement would be considered based on the proposed surface use and proposed mitigations indicating the proposal would not adversely affect sand dune lizard habitat.

The CMA and occupied habitat within the PPA would be designated as ROW avoidance areas. The Mescalero Sands ACEC and the Mathers RNA would continue

to be ROW exclusion areas. The Laguna Plata Archeological District, the Maroon Cliffs Archeological District, and the Mescalero Sands North Dune OHV Area would continue to be ROW avoidance areas.

Lands acquired as habitat for special status species would be added to the ROW avoidance areas. ROWs for projects and facilities such as fences, range and wildlife water pipelines, power distribution lines, access to oil and gas facilities, or oil and gas collection or distribution pipelines would be considered in avoidance zones on a case-by-case basis to meet the overall objectives of this plan.

Minerals

Fluid Minerals

Alternative B is similar to Alternative A with the following differences:

Leasing with requirements for Plans of Development (PODs) or Conditions of Approval (COAs) to ensure orderly development with a minimum of surface impact in lesser prairie-chicken and sand dune lizard habitats would be considered on a case-by-case basis, providing impacts from exploration and development would not impact efforts to restore habitat.

These PODs and COAs would contain various strategies for minimizing impacts associated with new development and for reclaiming developed areas. Methods to achieve this potential would include, but not be limited to, vegetative treatments, rehabilitation of pads, roads, and ROWs and reduction of infrastructure needed to support the lease. They would be designed to improve habitat, enhance connectivity, reduce fragmentation, and move towards Desired Plant Community (DPC).

Within the Planning Area, timing (March 1st to June 15th, from the hours of 3:00 a.m. to 9:00 a.m.) and noise stipulations would be

applied. These stipulations are intended to prevent disruption of mating and nesting by activities associated with energy exploration and development. Stipulations would be imposed in areas where the species is present.

Exceptions to these requirements would be considered in emergency situations such as mechanical failures. Potential drill rig loss, drill rig scheduling or the potential loss of a lease are not emergency situations. These exceptions, however, would not be granted if BLM determines, on the basis of biological data or other relevant facts or circumstances, that the granting of an exception would disrupt prairie-chicken booming activity during the breeding season. Requests for exceptions on a non-emergency basis may also be considered, for the period of March 1st to June 15th, but these exceptions would not be granted if BLM determines that there is lesser prairie-chicken habitat, lesser prairie-chicken sightings, historic leks and or active leks within 1.5 miles of the proposed location, or any combination of the above mentioned criteria.

Exceptions to the timing stipulation/COA would not be granted in the following areas:

1. The CMA or PPA.
2. The IPA or SSPA within 1.5 miles of a lek that has been active for one out of the last 5 years.
3. The IPA or SSPA within 1.5 miles of sightings within the past 2 years. If lesser prairie-chickens are not sighted by the end of the second year, exceptions would be considered for the area. However, if a new sighting occurs in the same area, the stipulations would be reapplied.
4. The 17 Habitat Evaluation Areas before and during the habitat evaluation process. Once the evaluation of the 17 Habitat Evaluation Areas is complete, the Habitat Evaluation Areas that do not meet the criteria would be considered for

exceptions. No exceptions would be granted in the Habitat Evaluation Areas that meet or exceed the criteria in Appendix 8.

5. Any new areas identified as Habitat Evaluation Areas that were not in the original 17 but meet or exceed the evaluation criteria.

Exceptions would also be subject to other applicable regulatory and environmental compliance requirements. BLM reserves the right to impose other stipulations in the same area of this leasehold if an exception is granted.

Unitization may be utilized on new leases in the Planning Area to ensure protection of special status species habitat; as allowed by lease notices. Existing lessees would be encouraged to join these units.

Within the Planning Area, coordinated efforts to reclaim and restore habitat in previously developed areas would be carried out when and where opportunities arise. Priority locations are areas in the Habitat Evaluation Areas, IPA and SSPA and around lesser prairie-chicken reserves where restoration can help restore connectivity between isolated habitat blocks. Attempts would be made to reclaim two previously disturbed acres for every one acre of new disturbance.

If new lesser prairie-chicken leks are discovered in the future within the Planning Area, 1.5-mile radius around the lek would be considered occupied habitat and the prescriptions of this alternative would apply to proposed actions in and around that habitat. Similarly, if new sand dune lizard occupied habitat is discovered in the future within the Planning Area, the prescriptions of this alternative would apply in and around that habitat.

Core Management Area

Within the Planning Area, the CMA would be expanded to include the existing Mescalero Sands ACEC as one contiguous block.

In all other respects, the prescriptions of the CMA of Alternative B are the same as the prescriptions of the CMA of Alternative A.

As shown by Table 2-6, the CMA under this alternative equals about 15 percent of the total acreage in the Planning Area. About 25 percent of the Federal mineral acreage in the CMA is leased and 75 percent is unleased. Under this alternative, the unleased (closed) Federal mineral acreage in the CMA comprises about 11 percent of the total Federal mineral acreage in the Planning Area.

Primary Population Area

In the PPA, areas designated as occupied, suitable, potentially suitable and unsuitable habitat are shown on Map B-5. Map B-5A shows the tracts available for oil and gas leasing and tracts already under lease in all habitat categories.

Areas designated as potentially suitable lesser prairie-chicken habitat would be available for new oil and gas leasing. If leasing and development in these areas would impact suitable habitat, then areas designated as potentially suitable habitat would be closed to new oil and gas leasing. Areas of potentially suitable habitat where lands can be used to "block up" larger surrounding areas of suitable habitat would also be closed to new leasing.

BLM would consider new leasing in suitable habitat within the Primary Population Area when there is a calculated two to one ratio of reclaimed acres to disturbed acres within

the entire PPA and inter-agency coordination with the US Fish and Wildlife Service is conducted. The calculation would be conducted at five-year increments from the approval of this resource management plan amendment. In addition to meeting the two to one ratio, other considerations factoring into a decision for new leasing include, but are not limited to, the site characteristics of a tract nominated for leasing such as its proximity to occupied habitat, surface ownership, and the density of existing infrastructure.

BLM would consider new oil and gas leasing in occupied habitat within the PPA at such time the lesser prairie chicken is no longer considered for listing as a threatened or endangered species.

In all other respects, the prescriptions of the PPA of Alternative B are the same as the prescriptions of the PPA of Alternative A.

As shown by Table 2-6, the Federal mineral acreage in the PPA under this alternative equals about 17 percent of the total Federal mineral acreage in the Planning Area. About 53 percent of the Federal mineral acreage PPA is leased and 47 percent is unleased. Under this alternative, the unleased (closed) Federal mineral acreage in the PPA comprises about 8 percent of the total Federal mineral acreage in the Planning Area.

Sparse and Scattered Population Area

In all respects, the SSPA of Alternative B is the same as the SSPA of Alternative A with the exception of the timing and noise stipulation.

As shown by Table 2-6, the Federal mineral acreage in the SSPA under this alternative equals about 11 percent of the total Federal mineral acreage in the Planning Area. About 60 percent of the Federal mineral acreage in the SSPA is leased and 40 percent is unleased. Under this alternative,

the unleased Federal mineral acreage in the SSPA comprises about 5 percent of the total Federal mineral acreage in the Planning Area.

Isolated Population Area

In all respects, the IPA of Alternative B is the same as the IPA of Alternative A with the exception of the timing and noise stipulation.

As shown by Table 2-6, the Federal mineral acreage in the IPA under this alternative equals about 56 percent of the total Federal mineral acreage in the Planning Area. About 93 percent of the Federal mineral acreage in the IPA is leased and 7 percent is unleased. Under this alternative, the unleased Federal mineral acreage in the IPA comprises about 4 percent of the total Federal mineral acreage in the Planning Area.

Isolated Population Area – Habitat Evaluation Areas

Habitat suitability analyses would be conducted in the 17 Habitat Evaluation Areas (see Map B-1). These areas would be prioritized for reclamation potential and for potential to re-established connectivity to adjacent isolated habitat blocks. Until the evaluation of an area is complete, new oil and gas leasing would be deferred. It may be determined, through the suitability analysis process, that these areas would be discretionarily closed to future oil and gas leasing. Criteria for closing these areas or making these areas available for lease can be found in Appendix 8. Lessees of existing oil and gas leases would be required to provide a POD.

Deferment of leasing in the 17 Habitat Evaluation Areas would continue until the habitat suitability analysis is complete, pending available funding and partners willing to work with BLM.

Sand Dune Lizard – New Oil and Gas Leasing

Tracts nominated for lease within the Lizard Habitat Boundary (see Map B-1) would be evaluated by BLM for sand dune lizard habitat suitability. Depending on the results of that evaluation, leasing of the tract may be deferred from leasing until occupancy surveys can be completed, or the tract may be offered for lease with a No Surface Occupancy (NSO) stipulation, or a Sand Dune Lizard Habitat survey stipulation, or other appropriate stipulations including standard stipulations.

Prospective buyers of Federal leases described above should realize implementation of NSO or Sand Dune Lizard Habitat stipulations may not allow approval of all spacing unit locations or full development of the lease.

New leases would require PODs which would incorporate the results of the habitat surveys. The purpose of a POD is to assist the operator and BLM with planning for orderly development as a means to reduce or eliminate impacts to special status species habitat. A POD would also incorporate applicable best management practices and disclose all future well locations to the fullest extent possible; the location and arrangement of well infrastructure (e. g., tank batteries, compressors, power lines and poles); road locations; and ROWs.

Should a tract be leased with the conditions described above, the lessee would be responsible for any subsequent occupancy surveys within the lease. Surveys for occupied sand dune lizard habitat would follow scientific protocol and conducted by personnel approved by BLM. Surveys would follow the protocol outlined in the following section, Sand Dune Lizard – Existing Oil and Gas Leases.

If, after acquiring a Federal mineral lease with an NSO stipulation or any other stipulation, the lessee can demonstrate

through the use and application of peer-reviewed science that the rationale behind the stipulation is no longer necessary, waivers, exceptions, or modifications to the lease would be considered by the Authorized Officer. The lease would be subject to the Pecos District land use plans in effect at the time of consideration. Granting of a waiver, exception or modification is a discretionary action which the operator should not routinely expect.

- **WAIVER:** a permanent exemption for a lease stipulation and the stipulation would no longer apply anywhere within the lease.
- **EXCEPTION:** a case-by-case exemption for a lease stipulation and the stipulation would continue to apply to all other sites within the lease.
- **MODIFICATION:** a fundamental change in the provisions of a lease stipulation, either temporarily or for the term of the lease.

See Appendix 6, Monitoring and Implementation, Table AP6-1 for details for the steps necessary to obtain waivers, exceptions and modifications.

Waivers, exceptions, modifications would also be subject to other applicable regulatory and environmental compliance requirements. BLM reserves the right to impose other stipulations in the same area of this leasehold if a waiver, exception or modification is granted.

Should occupied sand dune lizard habitat be found outside the Lizard Habitat Boundary (shown on Map B-1) but within the Planning Area, the management prescriptions described above would be applied to new oil and gas leasing.

Sand Dune Lizard – Existing Oil and Gas Leases

For existing leases within the sand dune lizard boundary (see Map B-1) the lessee

would be responsible for occupancy and habitat suitability surveys required prior to permitting surface disturbing activities. Surveys would be considered Conditions of Approval (COAs) and conducted by BLM employees or BLM approved contractors and personnel. Depending on the results of the survey, proposed well sites may not be available to be developed and directional drilling may be necessary to develop all spacing units within a lease. Shinnery oak flats adjacent to dune complexes are the preferred location for proposed well sites.

Surveys for occupied sand dune lizard habitat would follow scientific protocol. The recommended time period for sand dune lizard surveys is June 1 through September 30 between the hours of 9:00 a.m. and 5:00 p.m., but avoiding the heat of mid-day. Since surveys must be completed before any surface disturbing activities would be approved, lessees that do not complete surveys in the proper time frame would have to wait up to 8 months, October 1 through May 31, before conducting surveys. Depending on the results of the surveys, prospective well locations may be moved up to 200 meters to avoid occupied or suitable sand dune lizard habitat.

Existing leases would require PODs, when requested, which would incorporate the results of the habitat surveys. The purpose of a POD is to assist the operator and BLM with planning for orderly development as a means to reduce or eliminate impacts to special status species habitat. A POD would also incorporate applicable best management practices and disclose all future well locations to the fullest extent possible; the location and arrangement of well infrastructure (e. g., tank batteries, compressors, power lines and poles); road locations; and ROWs.

If the lessee can demonstrate through the use and application of peer-reviewed science that the rationale behind a

stipulation is no longer necessary, waivers, exceptions, or modifications to the lease may be considered by the Authorized Officer. The lease would be subject to the Pecos District land use plans in effect at the time of consideration. Granting of a waiver, exception or modification is a discretionary action which the operator should not routinely expect.

- **WAIVER:** a permanent exemption for a lease stipulation and the stipulation would no longer apply anywhere within the lease.
- **EXCEPTION:** a case-by-case exemption for a lease stipulation and the stipulation would continue to apply to all other sites within the lease.
- **MODIFICATION:** a fundamental change in the provisions of a lease stipulation, either temporarily or for the term of the lease.

Waivers, exceptions, modifications would also be subject to other applicable regulatory and environmental compliance requirements. BLM reserves the right to impose other stipulations in the same area of this leasehold if a waiver, exception or modification is granted.

Should occupied sand dune lizard habitat be found outside the Lizard Habitat Boundary (shown on Map B-1) but within the Planning Area, the management prescriptions described above would be applied to the development of existing oil and gas leases.

Mineral Materials

In the CMA and in the PPA, no new mineral material sites would be authorized in occupied or suitable prairie-chicken habitat. In the SSPA, no mineral material sites would be authorized in occupied prairie-chicken habitat. In the IPA, no new mineral material sites would be authorized within 1.5 miles of an active lek.

Alternative Energy

One of the priorities of this alternative is protection, and expansion of occupied habitat and suitable habitat for the lesser prairie-chicken and sand dune lizard habitat. Applications to permit either solar or wind energy sites on public land within the Planning Area would be considered if the applicant can demonstrate no negative impacts on occupied and suitable lesser prairie-chicken or sand lizard habitat.

Vegetation

In addition to items in Alternative A, the following would be implemented in managing vegetation.

The Desired Plant Community (DPC) concept of the Roswell Field Office, described in Appendix 11 of the Roswell Resource Area Draft RMP/EIS (September 1994) and implemented by the 1997 Approved Roswell RMP, would be adopted in the Carlsbad Field Office portion of the Planning Area.

The standard practices that would be employed to meet management objectives in each community are:

- Utilization levels not exceeding 45 percent of annual plant production. Utilization levels would be determined prior to green-up and measured on key forage species and overall utilization. See Appendix 6 for further description of the monitoring process.
- Projects such as fences, exclosures, water developments, erosion control structures, reseeding, or vegetative sales.
- Grazing treatments such as rest, changes in season of use, class of livestock, or stocking rates.

- Vegetation treatments, including, prescribed fire or wildland fire use, fuelwood sales, and biological, chemical or mechanical controls.
- Treatment of salt cedar as conditions warrant. Considerations in determining whether to treat include location and density of salt cedar stands, available budget and staff to conduct treatment, and objectives of proposed treatment.

Constraints on treatments for each community would be:

- Native, deciduous tree species in all plant communities, such as hackberry, black walnut, New Mexico walnut, and desert willow, would be protected from vegetation treatments and surface disturbance.

Grassland Community

While this community has been broken up into several subtypes, the most common subtype within the Planning Area is the mesquite grassland. This subtype is found in the "sand country" east of the Pecos River and is characterized by level to gently rolling terrain, with dunes ranging from small stabilized hummocks to large active dunes. Vegetation treatments to influence DPC would be considered at the following threshold levels:

Mesquite--1/3 of the shrub cover composition

Cholla --100 plants/acre

Catclaw-- 5 percent vegetative cover

Creosote--20 percent of the vegetative canopy

Lechuguilla--20 percent of the vegetative canopy

Tarbush--20 percent of the vegetative canopy

Broom snakeweed--25 percent by weight of vegetative production

Pinon/juniper--12 percent vegetative cover

TABLE 2-7 VEGETATION MANAGEMENT - GRASSLAND COMMUNITY		
Vegetative Community Objectives		
Percent Vegetative Cover	Percent Vegetative Composition	Percent Composition By Weight
Grass/Forbs 15-52	Grasses 30-85	Grasses 60-90
	Forbs 10-15	Forbs 10-30
Shrubs/Trees 3-12	Shrubs 1-10	Shrubs 15-25
		Trees 1-10
Bare Ground 14-60		
Small Rock/ Large Rock 0-30		
Litter 8-44		
SOURCE: Pecos District Office Files, 2006		

Shinnery Oak-Dune Community

Vegetation treatments to influence DPC in the shinnery oak-dune community would be considered at the following threshold:

Mesquite--1/3 of the shrub cover composition

Shinnery Oak --40 percent of vegetative cover by composition

Constraints on treatments in the shinnery oak dune community would be:

- Treatments may be conducted to achieve DPC objectives in areas that are not considered suitable or occupied habitat for special status species (e.g., the sand dune lizard). Suitable and occupied habitat would not be chemically treated unless the species is removed from State or Federal listing, or a chemical application rate is developed that would not impair habitat.

Mixed Desert Shrub Community

Vegetation treatments to influence DPC in the mixed desert shrub community would be considered at the following threshold levels:

Mesquite-- 1/3 of the shrub cover composition

Cholla--100 plants/acre

Catclaw --5 percent canopy cover

Creosote--20 percent of the vegetative canopy

Lechuguilla--20 percent of the vegetative canopy

Tarbush--20 percent of the vegetative canopy

Broom snakeweed--25 percent by weight of vegetative production

Pinon/juniper--2 percent vegetative cover

TABLE 2-8 VEGETATION MANAGEMENT – SHINNERY OAK-DUNE COMMUNITY		
Vegetative Community Objectives		
Percent Vegetative Cover	Percent Vegetative Composition	Percent Composition By Weight
Grass/Forbs 16-40	Grasses 50-70	Grasses 60-80
	Forbs 10-15	Forbs 10-30
Shrubs/Trees 3-17	Shrubs 25-40	Shrubs 15-25
		Trees 1-10
Bare Ground 5-20		
Small Rock/ Large Rock 0-1		
Litter 25-70		
SOURCE: Pecos District Office Files, 2006		

The Vegetative Community Objectives listed above would replace the cover and composition requirements for high quality habitat outlined in Alternative A.

Ecological site descriptions, currently being modified by NRCS to include plant communities and transitional pathways, would be used to assess the Standards for Rangeland Health.

TABLE 2-9 VEGETATION MANAGEMENT – MIXED DESERT SHRUB COMMUNITY		
Vegetative Community Objectives		
Percent Vegetative Cover	Percent Vegetative Composition	Percent Composition By Weight
Grass/Forbs 11-28	Grasses 55-75	Grasses 50-80
	Forbs 10-20	Forbs 10-20
Shrubs/Trees 6-15	Shrubs 15-20	Shrubs 10-30
	Trees 1-10	Trees 1-10
Bare Ground 10-40		
Small Rock/ Large Rock 15-35		
Litter 1-12		
SOURCE: Pecos District Office Files, 2006		

Rangeland restoration and vegetation treatments would continue to be implemented to improve or maintain the plant community needed to achieve multiple-use management goals. These goals would address watershed management, wildlife habitat, and rangeland health. Plant communities in the Carlsbad Field Office are based on the NRCS ecological site descriptions and are described in the Roswell Field Office by the DPC listed in Appendix 11 of the 1994 Draft Roswell RMP. Brush encroachment from mesquite and catclaw would be a primary target to restore native grassland ecosystems with a focus on lesser prairie-chicken habitat types. Growing season rest for 2 years after treatment would be required, unless earlier grazing use or a longer deferment is needed to make progress towards meeting the vegetative standard.

Within the Planning Area, any habitat that is currently designated as unsuitable for lesser prairie-chicken or sand dune lizard, but has potential to become suitable would be identified and targeted for treatment. Methods to achieve this potential would

include, but not be limited to, vegetative treatments, rehabilitation of pads, roads, and ROWs, and would be designed to improve habitat, enhance connectivity, reduce fragmentation, and move towards DPC. Not all areas designated as unsuitable habitat, however, can be converted to suitable since the soils in some of these areas are not capable of producing the necessary vegetation for lesser prairie-chicken or sand dune lizard habitat.

Although mineral extraction may occur on a given piece of land over a period of many years, eventually resources become exhausted and wells and related infrastructure are taken out of production. In some areas this has already occurred; elsewhere, some wells are nearing maturity and may be plugged and abandoned within the next decade. This would create opportunities to increase suitable habitat, and to create or expand lesser prairie-chicken management areas. Recent pilot projects have focused on reclamation of abandoned well-pads and access roads, and re-contouring these sites with the surrounding landscape. Rangeland restoration efforts would target disturbed areas such as plugged/abandoned pads, roads, and ROWs in lesser prairie-chicken habitat areas. Techniques to accomplish this restoration include removal of caliche, re-contouring, reseeding, fertilizer/water application if appropriate, and temporary fencing to allow establishment of vegetation. A combination of techniques could be utilized and would be site-specific, depending on habitat requirements.

Mesquite encroachment into sand-shinnery and sand-sage ecosystems reduces the amount of forage and creates habitat that is unsuitable for lesser prairie-chicken nesting or brood-rearing. Mesquite control may be used to improve rangeland health in areas not used by lesser prairie-chickens, thereby reducing grazing pressure in nesting areas. This also could help offset forage losses due to initiation of conservative grazing on other ranch lands that are important lesser

prairie-chicken habitat. Thus, mesquite control would be considered a valuable management tool.

While much of the targeted area is not in the sand-shinnery and sand-sage ecosystems, indirect benefits, such as reduced grazing pressure in nesting or brood rearing areas, would be realized. The intent of these treatments is to move towards the attributes of DPC described above.

Shinnery oak treatments would follow guidelines described under alternative A.

Vegetative treatments would include chemical, mechanical, and the use of prescribed fire. Brush species such as mesquite, catclaw, and noxious/invasive weeds would be targeted and treatment would be site-specific based on habitat requirements and site potential. Standard Bureau stipulations regarding buffer areas and growing season rest would be applied.

Buffers would include "leave out" or untreated areas to protect habitat needs such as cover or to preserve those areas where habitat requirements are being met. Growing season rest for 2 years after treatment would be required, unless earlier grazing use is deemed a necessary tool to achieve habitat requirements or a longer deferment is needed due to drought conditions.

Livestock Management

Under Alternative B, approximately 1.85 million acres, which includes about 850,000 acres of public land and makes up all or parts of 114 grazing allotments, would be available for livestock use.

Currently, a total of 192,125 AUMs are permitted either by grazing permit or grazing lease. Any adjustments to a permit or lease, whether an increase or a decrease, would be made based on monitoring data,

Standards Assessments, and through consultation, as discussed in 43 CFR 4100.

Adjustments may include changing the kind and class of livestock, the season of use, the number of livestock, or grazing patterns. These adjustments can occur either on a pasture basis or allotment wide. Actual use varies from year-to-year due to adjustments of annual stocking rates and other management practices. These annual adjustments are made at the grazing permittee/lessee's request. The permittee/lessee may reduce livestock numbers due to drought, market conditions, or other reasons; or may ask for a temporary increase if good rainfall and corresponding forage production has occurred. While the current grazing regulations (43 CFR 4100) provide flexibility and wide latitude to improve and maintain rangeland health, voluntary relinquishment would be one method to meet the goal of establishing habitat reserves for the lesser prairie-chicken within the Planning Area. Under this alternative, the decision to relinquish livestock grazing is totally voluntary on the part of the permittee/lessee. If a grazing permittee/lessee decides to voluntarily relinquish grazing on his/her allotment to resolve conflicts that exist between livestock grazing and protection of lesser prairie-chicken habitat, BLM would close the allotment to livestock grazing. This allotment closure would continue for the life of this plan amendment and may or may not continue when the plan is revised.

The criterion for BLM to accept a voluntary relinquishment and to close the allotment to grazing is that conflicts exist between livestock grazing and protection of lesser prairie-chicken habitat.

Since population numbers and habitat for the lesser prairie-chicken can be impacted by livestock grazing, management strategies would be implemented on allotments within the Planning Area. The strategies, based on monitoring data,

include changing the time of year certain pastures are grazed, reducing/increasing allowable utilization levels, implementing pasture rotation schemes, and reducing/increasing the annual stocking rates on public land. Seasonal use restrictions would be applied, on a pasture basis, if monitoring indicates habitat requirements are not being met. An example would be removing livestock from a pasture during lesser prairie-chicken booming, and nesting seasons, and then allowing livestock back into the pasture once this timeframe is past.

Growing season rest for 2 years after a brush control treatment would be required, unless a different time period, longer or shorter, is deemed a necessary tool to achieve habitat requirements.

As part of livestock management Guidelines, range improvement projects would be constructed where it is determined that these projects can enhance habitat. Improvements such as fencing, both traditional wire and "virtual" fences, and water development would be constructed to allow continued livestock use while improving habitat requirements for both lesser prairie-chickens and sand dune lizards. An example would be a cross fence in a large pasture, especially if only a portion of the pasture is suitable/occupied habitat that would divide the pasture along the suitable/occupied habitat line. By constructing the fence, livestock use could occur in the non-suitable portion during key time periods, while allowing growing season rest or no livestock in the suitable area while young are being reared.

The same idea could be accomplished by adding additional water sources in a large pasture with few existing water sources. Adding another trough in non-suitable areas could draw livestock out of suitable areas during key time periods. As the technology becomes available, virtual" fencing, which is a combination of satellite/computer/ear tag technology that provides stimuli to livestock to guide their movement, could also be used

to move livestock out of key areas for certain time periods.

Range improvement projects would not be allowed if it is determined that the project could have negative impacts to habitat. An example would be a water trough, or any activity, that would concentrate livestock at the edge of a dune complex that has occupied or suitable habitat for sand dune lizards. Concentrating animals in such an area could break down the dune and reduce or eliminate the ability of sand dune lizards to survive.

Wildlife including Special Status Species

Under Alternative B, most of the wildlife habitat needs or prescriptions are identified in other resource disciplines. Therefore refer to the minerals, livestock grazing, vegetation, recreation, realty, and OHV for guidelines addressing sand dune lizard and lesser prairie-chicken habitats. Current surface and occupancy requirements except those referring to lesser prairie-chicken and sand dune lizard would remain in place.

This alternative is similar to Alternative A with the following differences and additions:

- Predator control for the purpose of protecting sensitive wildlife species may be conducted on public land within the Planning Area on a case-by-case basis. Any predator control actions would follow the protocol listed in the 1997 Roswell RMP.
- Increased intensity in research and monitoring would be needed to evaluate changes in habitat condition, land use threats to the species, species use and distribution, reclamation efforts, propagation, and other projects that may help in enlarging the knowledge base of these species. See Appendix 6 for a description of monitoring lesser prairie-chicken habitat.

- BLM would support the propagation of lesser prairie-chicken and transplant efforts throughout the Planning Area, with an emphasis that the habitat parameters necessary for survival be in place prior to reintroduction; unless identified and needed for research projects.
- If necessary, BLM would pursue and propose changes to State wildlife management regulations on game species based on impacts to land resources and game populations.
- BLM would continue reclamation practices on historical oil and gas for the betterment of rangeland health and wildlife species. These efforts would enhance distribution of special status species in appropriate habitats over the long-term.
- Based on monitoring visitor use and lesser prairie-chicken needs, if results indicate that a SRP is the best method to regulate visitations in lek areas, then an SRP may be issued. If an SRP were to be issued, there would be no cost to the visitor/permittee. The SRP would allow visitations for the purpose of watching or photography to continue while tracking visitor use and spreading impacts so that one lek or group of leks does not bear the brunt of visitors.
- The issuance of a special recreation permit would contain specific stipulations regarding distance, noise, and interfering with the natural mating ritual of the lesser prairie-chicken. The Wildlife and Recreation Specialists in each Field Office would draft stipulations to be attached to a SRP for the purpose of minimizing impact to mating areas.

Recreation

Alternative B would adopt the prescriptions of the No Action Alternative with the following additions:

- In the Planning Area, outside the SRMAs there are extensive recreation management areas (ERMAs). Within these ERMAs recreation use includes hunting, OHV riding, photography, driving for pleasure, watchable wildlife, and dispersed camping.
- At present there is no data to support the premise that recreational activities within the Planning Area are the causes of population decline. However, through visitor monitoring in the Planning Area, if data becomes available that identifies recreational use as a factor in population decline, BLM would implement corrective management actions such as; seasonal closures of roads leading to lek areas, noise restrictions in or around leks, or the issuance of Special Recreation Permits (SRP).

During the lesser prairie-chicken mating season, noise restrictions would be in effect from March 1 through June 15 and from 3 a.m. to 9 a.m. Generators associated with recreation uses would not be allowed in or near identified mating areas during booming season. These conditions would be identified on interpretive signs and placed in key areas within the Planning Area.

Off-Highway Vehicle Management

Within the Planning Area, inventories, public review, and transportation planning would be conducted to support road-by-road designations for roads and trails suitable for OHV use. Pending completion of formal designations, the Planning Area would be managed as limited to existing roads and trails for OHV. A preliminary road network is shown on Map R-1.

Within the Planning Area, seasonal OHV use would be implemented designated OHV areas based on monitoring of visitor use and needs of the lesser prairie-chicken and sand dune lizard. These restrictions would be implemented to protect booming areas adjacent to the OHV areas during the

booming season. If monitoring of lesser prairie-chicken and their habitat indicates the need for further restrictions, then no OHV use would be allowed in the Planning Area between the hours of 3 a.m. to 9 a.m. from March 1 through June 15.

A lesser prairie-chicken and sand dune lizard survey would be conducted prior to implementation of any phases since this OHV area borders the CMA. See Map B-3 for the location of the phases. Providing there would be no conflicts with lesser prairie-chicken and sand dune lizard habitat issues, the Mescalero Sands North Dune OHV Area would be expanded from the existing 562 acres to 1,674 acres in a three-phase plan based on monitored visitor use and demand. Phase One would be 418 acres to the north of the existing OHV boundary and would be limited to designated routes. Phase Two would be 295 acres south of the existing boundary designated open. Phase Three would be 399 acres east of the existing boundary designated open. Acreage for the expansion of each phase of the Mescalero Sands North Dune OHV Area was identified by BLM staff biologists. Prior to the release of the Draft EIS, BLM staff biologists reported no conflicts with special status species or their habitat. Before expanding of any phase of Mescalero Sands North Dune OHV Area, the acreage would be surveyed again by BLM staff biologists to confirm that conflicts do not exist with special status species or their habitat.

Every established recreation area, including OHV areas, must have a recreation area management plan (RAMP). This resource management plan amendment would amend the RAMP for the Mescalero Sands North Dune OHV Area.

Improvements to the existing facilities and the development of additional facilities would continue throughout the Mescalero Sands North Dune OHV Area, so long as they are compatible with management of special status species. Signage would be

placed at key locations for interpretation and education of the recreating public and to show route designations.

The portion of the Hackberry Lake Intensive OHV Area (22,673 acres) located within the Planning Area, would be designated limited to existing designated routes with the exception of 132 acres of dune complex, known as the Shugart Dunes, which would remain open.

The Square Lake dune complexes are within the Planning Area and have historically been heavily used for OHV recreation. BLM would propose establishing the Square Lake OHV Area consisting of 5,974 acres designated as limited to existing routes and 817 acres of sand dunes designated as open. See Map B-4 for the location of the dunes and the designated roads and trails. BLM staff biologists identified the dune areas and the transverse routes between the dunes. The staff biologists found no conflicts exist in lesser prairie-chicken or sand dune lizard habitat. Prior to the release of the Draft EIS, wildlife biologists reported no conflicts with special status species or their habitat in the proposed Square Lake OHV Area. Prior to any development in the Square Lake OHV Area, BLM staff biologists would re-survey the area to confirm there are no conflicts with the Special Status Species or their habitat.

Should the criteria be met to establish the Square Lake OHV Area, BLM would develop a RAMP for the area which would include route designation and the impacts would be analyzed in a National Environmental Policy Act (NEPA) document. Once the RAMP is completed, implementation would include marking designated trails and developing maps of the trails.

Establishment of the proposed OHV area would be pending the results of the evaluation of the Habitat Evaluation Areas and a lack of conflicts with lesser prairie-

chicken and sand dune lizard habitat protection.

The proposed Square Lake OHV Area would be limited to vehicles with a width of 55 inches or less. This would normally exclude the use of sand rails and dune buggies. Signage containing information and showing designated routes would be placed at key locations for interpretation and education of the recreating public.

Special Management Areas

Same as the No Action Alternative.

Alternative C

This alternative would adopt the concepts of Interim Management (see Appendix 1).

Lands and Realty

Same as No Action Alternative.

Minerals

Fluid Minerals

This alternative would use a phased approach to evaluating oil and gas leasing and development within the Planning Area. Careful consideration of mineral leasing and development would be taken to avoid making land management decisions that may adversely affect special status species. Timing and noise stipulations for this alternative would be the same as the No Action alternative.

The following lists the conditions and criteria for prospective mineral leasing and development within the Planning Area.

Sand Dune Lizard

All Management Zones that have occupied or suitable sand dune lizard habitat would be closed to new leasing for the life of the plan amendment or until such time that the special status species is no longer

considered for listing as a threatened or endangered species. If new leasing is considered, conditions would be attached that would preclude listing the special status species as threatened or endangered.

Management Zones:

Zone 1 would be closed to new leasing until the lesser prairie-chicken is not warranted for listing based upon the USFWS candidate notice of review, which is completed on an annual basis. Exceptions to the closure may be considered on a case-by-case basis for pooling or drainage protection purposes, or for parcels that are insignificant in size. Granting exceptions would require a thorough review of habitat suitability, lek locations and cumulative impacts that would potentially occur if the exception is granted.

As shown by Table 2-10, the Federal mineral acreage in Zone 1 of this alternative equals about 32 percent of the total Federal mineral acreage in the Planning Area. About 40 percent of the Federal mineral acreage in Zone 1 is leased and 60 percent is unleased. Under this alternative, the unleased (closed) Federal mineral acreage in Zone 1 comprises about 19 percent of the total Federal mineral acreage in the Planning Area.

A tract offered for lease in Zone 1 would include a lease stipulation calling for a plan of development (POD) before any development would be authorized. A POD would be required to include all future well locations, well infrastructure (tanks, compressors, power lines/poles) and their location, road location, and ROWs that would access future wells.

Plans of development (POD) would also be required for existing leases. The POD would be required before the approval of the next well to be drilled within an existing lease. The purpose of a POD is to assist the operator and BLM with planning the

**TABLE 2-10
ALTERNATIVE C, ACRES OF FEDERAL MINERALS**

Management Zone	Acres of Leased Federal Minerals	Percent Leased Federal Minerals	Acres of Unleased Federal Minerals	Percent Unleased Federal Minerals	Total Federal Mineral Acres	Comparison of Federal Minerals to Total Federal Mineral Acreage in the Planning Area	Comparison of Unleased Acres to Total Federal Mineral Acreage in the Planning Area
Zone 1	144,622	40%	221,195	60%	365,817	32%	19%
Zone 2	59,910	69%	27,257	31%	87,167	8%	2%
Zone 3	453,546	89%	56,573	11%	510,119	45%	5%
Zone 4	167,652	92%	14,568	8%	182,220	16%	1%
Total	825,730	72%	319,593	28%	1,145,323	100%	28%

SOURCE: Pecos District Office Files, 2006.

orderly development as a means to reduce or eliminate impacts to special status species habitat. A POD would incorporate applicable best management practices and disclose all future well locations; the location and arrangement of well infrastructure (e. g., tank batteries, compressors, power lines and poles); road locations; and ROWs. To the extent possible, a 1.5-mile buffer zone that excludes drilling would be utilized around active leks (those active within the last 3 years) to provide resource protection.

Zone 2 would allow new leasing with a NSO stipulation. This would be applied on those lands associated with lesser prairie-chicken/sand dune lizard core areas in the Roswell and Carlsbad Field Offices. For existing leases, the same POD process for Zone 1 would be required.

As shown by Table 2-10, Federal mineral acreage in Zone 2 of this alternative equals about 8 percent of the total Federal mineral acreage in the Planning Area. About 69 percent of the Federal mineral acreage in Zone 2 is leased and 31 percent is unleased. Under this alternative, the unleased Federal mineral acreage in Zone 2 comprises about 2 percent of the total Federal mineral acreage in the Planning Area.

Zone 3 would allow new oil and gas leasing and would include a lease stipulation for a

POD before any development of the lease would be authorized. The POD would also account for habitat avoidance within a 1.5-mile radius of known historic lek sites and have the noise and timing stipulation applied to oil and gas activities and other potential disturbances along with the POD. For existing leases, the same POD process for Zone 1 would be required.

As shown by Table 2-10, Federal mineral acreage in Zone 3 under this alternative equals about 45 percent of the total Federal mineral acreage in the Planning Area. About 89 percent of the Federal mineral acreage in Zone 3 is leased and 11 percent is unleased. Under this alternative, the unleased Federal mineral acreage in Zone 3 comprises about 5 percent of the total Federal mineral acreage in the Planning Area.

Management of Federal minerals (both leased and unleased) in Zone 4 would be in accordance with existing resource management stipulations and conditions of approval.

As shown by Table 2-10, Federal mineral acreage in Zone 4 of this alternative equals about 16 percent of the total Federal mineral acreage in the Planning Area.

About 92 percent of the Federal mineral acreage in Zone 4 is leased and 8 percent

is unleased. Under this alternative, the unleased Federal mineral acreage in Zone 4 comprises about 1 percent of the total Federal mineral acreage in the Planning Area.

There would be no change from current management (current RMP) for locatable, saleable, or solid leasable minerals.

Alternative Energy

With regards to authorizing solar or wind energy sites within the Planning Area, Alternative C would be the same as the No Action Alternative.

Vegetation

Management direction would follow the No Action alternative with the addition of the DPC discussion under Alternative B.

Livestock Management

Management direction would be the same as the No Action Alternative.

Wildlife Including Special Status Species

Management direction would be guided under the No Action Alternative with the addition of guidelines applied to the minerals section for the lesser prairie-chicken and sand dune lizard.

Recreation

Same as the No Action Alternative.

Off-Highway Vehicle Management

Same as Alternative A.

Special Management Areas

Same as the No Action Alternative.

Alternative D

This alternative focuses on maintaining occupied lesser prairie-chicken and sand dune lizard habitat.

Lands and Realty

Same as the No Action Alternative.

Minerals

Fluid Minerals

Soils in some of these areas are not capable of producing the necessary vegetation for lesser prairie-chicken or sand dune lizard habitat.

Although mineral extraction may occur on a given piece of land over a period of many years, eventually resources become exhausted and wells and related infrastructure are taken out of production. In some areas this has already occurred; elsewhere, some wells are nearing maturity and may be plugged and abandoned within the next decade. This would create opportunities to increase suitable habitat, and to create or expand lesser prairie-chicken management areas. Recent pilot projects have focused on reclamation of abandoned well-pads and access roads, and re-contouring these sites with the surrounding landscape. Rangeland roads and ROWs no longer needed in lesser prairie-chicken habitat areas would be treated in such a manner. Techniques to accomplish would be developed as best management practices. Occupied habitat of the lesser prairie-chicken and the sand dune lizard would be closed to new oil and gas leasing. New leasing would be considered in occupied habitat on a case-by-case basis with a required unitization stipulation. Cooperative unitization would be promoted within the entire Planning Area.

Within the Planning Area in occupied lesser prairie-chicken habitat, no surface disturbing activities would be allowed within a 1.5 mile radius of active leks. If, in the future, new lesser prairie-chicken leks are discovered,

then the area around the lek would be considered occupied habitat and the prescriptions of this alternative would apply to proposed actions in and around that habitat.

**TABLE 2-11
ALTERNATIVE D, ACRES OF FEDERAL MINERALS**

Management Category	Acres of Leased Federal Minerals	Percent Leased Federal Minerals	Acres of Unleased Federal Minerals	Percent Unleased Federal Minerals	Total Federal Mineral Acres	Comparison of Federal Minerals to Total Federal Mineral Acreage in the Planning Area
Occupied Habitat	823,555	87%	120,851	13%	944,406	82%
Not Occupied Habitat	188,242	20%	12675	6%	200,917	18%
TOTAL	1,011,797	88%	133,526	12%	1,145,323	100%
SOURCE: Pecos District Office Files, 2006.						

Development of existing leases within occupied habitat would require a POD to be approved prior to authorizing surface disturbing activities. The purpose of a POD is to assist the operator and BLM in planning the orderly development as a means to reduce or eliminate impacts to special status species habitat. A POD would incorporate applicable best management practices and disclose all future well locations; the location and arrangement of well infrastructure (e. g., tank batteries, compressors, power lines and poles); road locations; and ROWs.

Timing and noise stipulations would be applied only in areas around active leks (occupied habitat).

Development of oil and gas resources would not be authorized in occupied sand dune lizard habitat, however, pre-development surveys by the lessee would not be required for exploration and development of oil and gas resources to determine occupancy for sand dune lizards.

Coordinated efforts to reclaim and restore habitat in previously developed areas would be carried out when and where opportunities arise. Priority areas for reclamation are those within occupied habitat or where restoration can help restore connectivity between isolated occupied habitat blocks. Attempts would be made to reclaim two previously disturbed acres for every one acre of new disturbance.

Solid Minerals

There would be no change from current management (current RMP) for locatable, saleable, or solid leasable minerals.

Alternative Energy

One of the priorities under this alternative is protection, and expansion of occupied habitat for the lesser prairie-chicken and sand dune lizard habitat. Applications to permit either solar or wind energy sites on public land within the Planning Area would be considered if the applicant can

demonstrate no negative impacts on occupied lesser prairie-chicken or sand lizard habitat.

Vegetation

Management direction would follow Alternative A, with the addition of the DPC discussion from Alternative B. These actions, designed to protect, maintain, and enhance lesser prairie-chicken and sand dune lizard habitat would focus only on occupied habitat.

Livestock Management

Management direction would follow Alternative A, except grazing management practices to meet vegetative and habitat parameters for the lesser prairie-chicken and sand dune lizard would be applied only in those pastures with occupied habitat within the Planning Area.

Within the Planning Area, when a grazing permit/lease is transferred due to the base property being sold and the buyer does not wish to graze livestock, the AUMs associated to the permit/lease would be placed in Voluntary Non-Use, and no livestock would be authorized. Voluntary Non-Use would only be authorized at the permittee/lessee's request, the request would be analyzed at each annual billing cycle, and would be used to enhance habitat for special status species.

Wildlife including Special Status Species

Under this alternative most of the wildlife habitat needs or prescriptions are identified in other resource disciplines. Therefore refer to the minerals, livestock grazing, vegetation, recreation, realty, and OHV for guidelines addressing sand dune lizard and lesser prairie-chicken habitats. All surface and occupancy requirements would remain in place except for those addressing sand dune lizard and lesser prairie-chicken habitat. These requirements would only apply to occupied habitat. The suitable

sand dune lizard habitat next to occupied habitat would not be protected under Alternative D.

Continued research and monitoring is needed to evaluate changes in distribution, habitat condition, land uses, threats to the species, reclamation efforts, propagation, and other projects that may help in enlarging the knowledge base of these species.

Under this alternative the timing and noise stipulation boundary would be modified to encompass occupied habitat only. The most current information would be used to decide whether to apply this stipulation at the APD stage.

Recreation

Same as the No Action Alternative.

Off-Highway Vehicle Management

Within the Planning Area, inventories, public review, and transportation planning would be conducted to support road-by-road designations for roads and trails suitable for OHV use. Pending completion of formal designations, the Planning Area would be managed as limited to existing roads and trails for OHV use. A preliminary road network is shown on Map B-6.

In the Mescalero Sands North Dune OHV Area, only Phase One expansion would be implemented. This expansion would enlarge the OHV area from 562 acres to 980 acres. The expansion would be based on monitored visitor use and demand providing there are no conflicts with lesser prairie-chicken and sand dune lizard. OHV use in Phase One would be limited to designated routes. See Map B-3 for the location of Phase One.

Additional improvements to the existing facilities and the development of additional facilities would continue throughout the Mescalero Sands OHV Area. Signage

would be placed at key locations for OHV and biologic interpretation and education of the recreating public and to show route designations. In the Carlsbad Field Office portion of the Planning Area, recreation activities involving the use of OHVs would be limited to existing roads.

Special Management Areas

Same as the No Action Alternative.

Alternative E

Alternative E would apply the suggestions for special management from the Lesser Prairie-chicken Area of Critical Environmental Concern (ACEC) nomination (see Appendix 3 and Maps E-1, E-2 and E-3) received by BLM in December 2002.

Under this alternative a committee made up of State, Federal and academic wildlife specialists would oversee the management of the proposed ACEC. The committee would develop and implement an adaptive management strategy for the proposed Lesser Prairie-chicken ACEC. This includes establishing Moratorium Areas and an Adaptive Management Area within the proposed ACEC. See Map E-1 and Appendix 3.

The Moratorium Areas include the populations south of Highway 380 and north of 33°N, the Quercho Plains populations and adjacent historic habitat, and the isolated northern populations adjacent to U.S. 70. The Adaptive Management Area is the remainder of the proposed ACEC.

Lands and Realty

Inside the proposed ACEC, no new authorizations for ROWs would be allowed within 1.5 km (0.9 miles) of an active lek.

Outside the proposed ACEC:

Lands acquired as habitat for special status species would be added to the ROW exclusion area for major projects. Exceptions would be considered in exclusion zones on a case-by-case basis for facilities such as fences, range and wildlife water pipelines, power distribution lines, access to oil and gas facilities, or oil and gas collection or distribution pipelines.

ROWs for projects and facilities such as fences, range and wildlife water pipelines, power distribution lines, access to oil and gas facilities, or oil and gas collection or distribution pipelines would be considered in avoidance zones on a case-by-case basis.

The Mescalero Sands ACEC and the Mathers RNA would continue to be ROW exclusion areas. The Laguna Plata and Maroon Cliffs Archeological Districts would continue to be ROW avoidance areas. The Lesser Prairie-chicken Core Habitat area (outside the proposed ACEC) and the Mescalero Sand North Dune OHV Area would continue to be ROW avoidance areas.

Minerals

Fluid Minerals

Outside the proposed ACEC, management would continue as described in the No Action Alternative. Inside the proposed ACEC boundary the following management actions would be applied:

- A 5-year moratorium on all new oil and gas activities (leasing and development) would be established in the Moratorium Areas of the Proposed ACEC. Due to lease rights granted under the Mineral Leasing Act, implementing the moratorium would require legislation to be enacted by Congress.

- No drilling would be allowed within 1.5 km (.9 miles) of known leks in the Adaptive Management Area of the Proposed ACEC.
- The entire proposed ACEC would be closed from locatable and salable mineral entry.
- The entire proposed ACEC would be closed to non-energy (solid) mineral leasing.

As shown by Table 2-12, about 53 percent of the Federal minerals acreage in the moratorium area is leased and 47 percent is unleased.

Alternative Energy

With regards to authorizing solar or wind energy sites within the Planning Area, Alternative E would be the same as the No Action Alternative.

Vegetation

Under Alternative E, a permanent ban on the use of tebuthiuron would be instituted within the Adaptive Management Area (see Map E-1). If other herbicides are deemed useful by the management committee to retard growth of shinnery oak and to promote grass cover, other less lethal herbicides would be used in place of tebuthiuron. In addition, the collection of plant material would be prohibited unless authorized by special permit, and then only for educational or scientific applications. The intentional introduction of any exotic plants or animals would be prohibited.

Livestock Management

Within the proposed ACEC (see Appendix 3 and Map E-2), where populations are sparse and disconnected or extirpation is imminent, a 5-year moratorium on livestock

grazing would be imposed to allow for an emergency habitat recovery period. Monitoring of habitat conditions and lesser prairie-chicken leks would be used to test the hypothesis that conditions for the species would improve during the 5-year moratorium. These areas include the populations south of Highway 380 and north of 33° N, the Querecho Plains populations and adjacent historic habitat, and the isolated northern populations adjacent to U.S. Highway 70.

The remaining portion of the proposed lesser prairie-chicken ACEC contains the "core" populations of the lesser prairie-chicken, and consists mainly of the Caprock Wildlife Area (see Appendix 3). Lesser prairie-chicken populations in this area are more stable and in less imminent danger, therefore this area would be used to test adaptive management methodologies for enhancing and sustaining lesser prairie-chicken habitat. These methodologies may include conservative livestock grazing, as well as herbicide applications, so long as the activities promote the recovery and stability of lesser prairie-chicken populations. All management strategies implemented within the Adaptive Management Area would be applied with rigorous experimental design. This Adaptive Management Area can be used to develop sound criteria for recovering lesser prairie-chickens, and that these criteria can then be applied to the other parts of the proposed lesser prairie-chicken ACEC, once the emergency moratorium has ended.

Under this alternative, there would be experimental reductions in livestock grazing within the Adaptive Management Area of the proposed lesser prairie-chicken ACEC. Active lek sites would be used as experimental units; with treatments applied to randomly selected, geographically independent lek sites. A minimum of five lek sites would be used for each grazing treatment. Treatments would include no grazing on at least one square mile (2.6

**TABLE 2-12
ALTERNATIVE E, ACRES OF FEDERAL MINERALS**

Management Category	Acres of Leased Federal Minerals	Percent Leased Federal Minerals	Acres of Unleased Federal Minerals	Percent Unleased Federal Minerals	Total Federal Mineral Acres	Comparison of Federal Minerals to Total Federal Mineral Acreage in the Planning Area
Moratorium	126,890	53%	110,341	47%	237,231	100%
Total	126,890	53%	110,341	47%	237,231	100%

SOURCE: Pecos District Office Files, 2006.

km²) within 1.5 miles (2.4 km.) of lek sites and light intensity grazing (after June 30) on at least one square mile (2.6 km²) within 1.5 miles (2.4 km.) of lek sites.

Under this alternative, the introduction of any exotic plants or animals would be prohibited.

Wildlife including Special Status Species

Under this alternative most of the wildlife habitat needs or prescriptions are identified in other resource programs. Therefore refer to the minerals, livestock grazing, vegetation, recreation, realty, and OHV for guidelines addressing sand dune lizard and lesser prairie-chicken habitats.

All other wildlife habitat management prescriptions would be the same as No Action.

Recreation

This alternative would adopt the prescriptions of the No Action Alternative with the following additions:

- Recreation activities and access to the proposed Lesser Prairie-chicken ACEC would be limited during the mating season and accessible only by special permit. A SRP would be required for users/visitors to enter an ACEC during the mating season for the purpose of watching or photography. The issuance of a SRP

would contain specific stipulations addressing distance, noise, and interfering with the natural mating ritual of the lesser prairie-chicken. Permit stipulation would have the purpose of minimizing impacts to mating areas.

- Recreation opportunities in the proposed ACEC would be limited only to recreation activities appropriate to the rural and natural nature of the Planning Area.

Off-Highway Vehicle Management

This alternative adopts the prescriptions of the No Action Alternative with the following differences:

- Vehicular traffic within the proposed ACEC would be limited to designated roads only. All other roads would be closed to all but administrative uses. Outside the proposed ACEC, but within the Planning Area, current OHV designations would remain unchanged. See Map E-3.

Special Management Areas

Alternative E would establish the Lesser Prairie-chicken ACEC, consisting of four tracts totaling 362 square miles (935 sq. km). (See Map E-1.) This alternative would incorporate the public land of the Mescalero Sands ACEC and eliminate separate ACEC designations.

ALTERNATIVES AND ISSUES CONSIDERED BUT NOT ANALYZED IN DETAIL

BLM considered two alternatives that were not analyzed in detail. This first would have permitted oil and gas leasing and subsequent development, livestock grazing and OHV use in the Planning Area without regard for the habitat needs of the lesser prairie-chicken and the sand dune lizard. Since this alternative would result in actions more detrimental to habitat protection than the No Action Alternative and likely speed the listing of either the lesser prairie-chicken or sand dune lizard as a threatened or endangered species, it was dropped from analysis.

The second alternative would have banned future development on existing oil and gas leases, and closed the Planning Area to livestock grazing. Holders of existing oil and gas leases have valid rights for the development of their leases. Closing the Planning Area to livestock grazing violates

the Taylor Grazing Act of 1934, Federal livestock grazing regulations, and would likely lead to protracted legal proceedings in Federal court. For these reasons, this alternative was dropped from analysis.

The concept of phased oil and gas development was not included in any of the alternatives. Given the amount of Federal minerals already under lease (see Table 2-2 and Map 2-1) and the number of active wells (see Map 2-3) in the Planning Area, phased development was dropped from consideration.

Public land in the western United States was assessed for renewable energy potential by the Department of Energy. The Planning Area has little potential for either geothermal and biomass energy generation and, therefore, these categories were not considered in the alternatives.

"Assessing the Potential for Renewable Energy on Public Lands" is available at www.nrel.gov/docs/fy03osti/33530.pdf.

COMPARISON OF ALTERNATIVES

TABLE 2-13A LANDS & REALTY

TOPIC	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Public Land Identified for Disposal	22,000 acres identified in the 1997 Roswell RMP within the Planning Area	3,151 acres in Roosevelt County identified for disposal switched to retention	Same as Alternative A	Same as No Action	Same as No Action	Same as No Action
Definitions of Right-of-Way Avoidance/Exclusion Areas	ROW avoidance/exclusion definition unified and updated for the Planning Area.	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Right-of-way Exclusion Areas	Mescalero Sands ACEC, Mathers RNA	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Right-of-Way Avoidance Areas	Core prairie-chicken Areas, Mescalero Sands North Dune OHV Area, Hackberry Lake Intensive ORV Area, Maroon Cliffs, Laguna Plata, Bear Grass Draw, Poco Site	Core Management Area, occupied habitat within the Primary Population Area, Mescalero Sands North Dune OHV Area, Hackberry Lake Intensive ORV Area, Maroon Cliffs, Laguna Plata, Bear Grass Draw, Poco Site	Same as Alternative A	Same as No Action	Same as No Action	Same as No Action
Rights-of-Way	Issued on a case-by-case basis	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Inside proposed ACEC, no ROWs within 0.9 miles of an active lek. Outside the proposed ACEC, same as No Action
Priority on Land Exchanges with State Land Office	None	Yes	Yes	None	None	None
Potential Acquisitions	Acres identified in the 1997 Roswell RMP within the Planning Area	Consider acquisitions from willing sellers for special status species habitat	Same as Alternative A	Same as No Action	Same as No Action	Same as Alternative A
Interstate Utility Corridors	Management Common to All Alternatives identifies corridors for major interstate utilities	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Electric Power Lines	No prescription	Same as No Action	Power Line Removal Credit program - 1.0 miles of new construction for every 1.5 miles of idle line removed	Same as No Action	Same as No Action	Same as No Action

COMPARISON OF ALTERNATIVES

TABLE 2-13B MINERALS

TOPIC	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Areas Closed to New Oil & Gas Leasing	Mathers RNA, Mescalero Sands ACEC, portions of Maroon Cliffs	CMA –includes Mathers RNA PPA – occupied & suitable habitat closed; potentially suitable habitat may be closed depending on its location to occupied & suitable. Future leasing in occupied possible if suitable acres increase & population increases. SSPA & IPA – occupied habitat is closed. 17 Habitat Evaluation Areas (HEAs) – may be closed depending on evaluation results.	CMA –includes Mescalero Sands ACEC & Mathers RNA PPA – occupied & suitable habitat closed; potentially suitable habitat may be closed depending on its location to occupied & suitable. SSPA & IPA – occupied habitat is closed. 17 HEA – may be closed depending on evaluation results. Maroon Cliffs – portions closed	Zone 1 (includes Mathers RNA and Mescalero Sands ACEC) and portions of Maroon Cliffs	Mathers RNA, Mescalero Sands ACEC, portions of Maroon Cliffs	Mathers RNA, Mescalero Sands ACEC, portions of Maroon Cliffs
		Mescalero Sands ACEC – closed Maroon Cliffs – portions closed				
NSO Applied to New Oil & Gas Leasing	Mescalero Sands North Dune OHV Area Corridor, Mescalero Sands North Dune OHV Area, portions of Maroon Cliffs	Mescalero Sands North Dune OHV Area Corridor, Mescalero Sands North Dune OHV Area and portions of Maroon Cliffs CMA – tracts along edges needed for proration/drainage PPA – where appropriate for occupied, suitable and potentially suitable habitat 17 HEA – may be applied depending on evaluation results.	Mescalero Sands North Dune OHV Area Corridor, Mescalero Sands North Dune OHV Area and portions of Maroon Cliffs CMA – tracts along edges needed for proration/drainage PPA – where appropriate for occupied, suitable and potentially suitable habitat 17 HEA – may be applied depending on evaluation results.	Mescalero Sands North Dune OHV Area Corridor, Mescalero Sands North Dune OHV Area and Zone 2	Mescalero Sands North Dune OHV Area Corridor and Mescalero Sands North Dune OHV Area	Mescalero Sands North Dune OHV Area Corridor and Mescalero Sands North Dune OHV Area
5-year Moratorium on All Oil & Gas Activity	None	Same as No Action	Same as No Action	Same as No Action	Same as No Action	No oil & gas activity (no new leasing or development of existing leases) in portions of the proposed ACEC south of US Hwy 380 & the 2 portions straddling US Hwy 70. Action needed by Congress.
Plan of Development (POD)	Not required	Required for all new & existing leases	Required for all new & existing leases	Required for all new & existing leases	Required only in occupied habitat	Not required

COMPARISON OF ALTERNATIVES

TABLE 2-13B MINERALS (Concluded)

TOPIC	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Disposal of Mineral Materials	Closed - Mathers RNA, Mescalero Sands ACEC, Mescalero Sands North Dune OHV Area	Same as No Action plus no new sites in occupied within the CMA and PPA	Same as Alternative A	Same as No Action	Same as No Action	No new minerals materials pits in Proposed ACEC
Sand Dune Lizard Protection	No surface disturbance in occupied habitat or within 100 meters of suitable habitat	Establishes a 13 wells/sq. mi. limit No development within 100 meters of occupied/suitable habitat	<u>New leases</u> - require a POD. NSO in dune complexes. <u>Existing leases</u> - require a survey with a POD to avoid occupied and suitable habitat by up to 200 meters.	No new leasing in occupied habitat. POD required for existing leases.	Same as No Action	None
LPC Timing & Noise Requirements	No drilling or geophysical exploration in LPC Habitat Area from March 15 – June 15. Exhaust noise not to exceed 75 db measured 30 feet from source	Current prescriptions maintained only as needed & active leks defined as active within 2 yrs. Exhaust noise not to exceed 75 db measured 30 feet from source	Timing expanded to March 1 – June 15 in Planning Area. Exceptions considered up to March 15. No exceptions considered after that date. Exhaust noise not to exceed 75 db measured 30 feet from source	Same as No Action	Same as No Action	Same as No Action
Development of Existing Leases In or Adjacent to Active LPC Leks	No disturbance within up to 200 meters of known leks	No disturbance within up to 200 meters of known leks plus PODs required	Same as Alternative A	Same as Alternative A	Same as Alternative A	No disturbance within 1.5 km (0.9 mi) of known leks

COMPARISON OF ALTERNATIVES

TABLE 2-13C ALTERNATIVE ENERGY, SOILS, WATER, FLOODPLAIN, AIR, INVASIVE SPECIES, FIRE MANAGEMENT, HAZARDOUS MATERIALS, CULTURAL RESOURCES, PALEOLONTOLOGICAL RESOURCES AND VISUAL RESOURCES

RESOURCE	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Alternative Energy	Commercial solar or wind energy sites considered on a case-by-case basis	Same as No Action	Solar or wind energy sites located in places with no impacts to occupied & suitable species habitat	Same as No Action	Solar or wind energy sites located in places with no impacts to occupied species habitat	Same as No Action
Soils	Current soil management prescriptions would continue	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Water Resources	Current quality & quantity management prescriptions for surface & subsurface water would continue	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Floodplains	Current floodplain management prescriptions would continue	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Air Quality	Current air quality management prescriptions would continue	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Non Native & Invasive Species	Current identification & treatment strategies would continue	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Fire Management	Current fire management categories & prescriptions would continue	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Hazardous Materials	Current management actions would continue	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Cultural Resources	Current management prescriptions would continue	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Paleontological Resources	Current management prescriptions would continue	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Visual Resources	Current management prescriptions would continue	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action

COMPARISON OF ALTERNATIVES

TABLE 2-13D VEGETATION

TOPIC	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Standards for Public Land Health & Guidelines for Livestock Grazing	Evaluated on a watershed basis using monitoring data and current conditions	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Brush Control	To be used as a tool to move toward the Standards	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Roswell Field Office 5-year Wait for Adjacent Chemical Treatments	No new treatment next to existing chemical treated area for 5 years in Roswell Field Office. Does not apply in Carlsbad Field Office.	In the Planning Area the 5-yr constraint dropped	Same as Alternative A	Same as No Action	Same as Alternative A	Same as No Action
Mesquite Treatment	To be used as a tool to move toward the Standards	Mechanical or chemical treatment to moves toward better chicken habitat	Same as Alternative A	Same as No Action	Same as Alternative A	Same as No Action
Shinnery-Oak Treatment	To be used as a tool to move toward the Standards	Treat in cases where shinnery-oak exceeds composition or canopy standards & only to defoliate, not eradicate.	Same as Alternative A	Same as No Action	Same as Alternative A	None
Desired Plant Community	DPC designated in Roswell, but not Carlsbad	Same as No Action	DPC adopted throughout the Planning Area	Same as No Action, plus add DPC from Alternative B	Same as Alternative A, plus add DPC from Alternative B	Same as No Action
Rest After Treatment	2 growing seasons	Minimum of 2 growing seasons, grazing after that time allowed if progress towards meeting vegetative standards is being made.	2 growing seasons unless a different time period, longer or shorter, is necessary to achieve habitat requirements	Same as No Action	Same as Alternative A	Not necessary in proposed ACEC, same as No Action outside proposed ACEC boundaries
Sand Dune Lizard Habitat	None	Where occupied & suitable habitat is separated by less than 200 meters, leave untreated dispersal corridors at least 500 meters wide	Occupied and suitable habitat would not be treated unless sand dune lizard is removed from state or Federal lists; or a chemical application rate is developed that would not impair habitat	None	Same as Alternative A	None
Tebuthiuron Ban	None	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Use banned in the adaptive management portion of the proposed ACEC

COMPARISON OF ALTERNATIVES

TABLE 2-13E LIVESTOCK MANAGEMENT

TOPIC	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Standards for Public Land Health & Guidelines for Livestock Grazing	Evaluated on a watershed basis using monitoring data and current conditions	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
5-year Moratorium on Livestock Grazing	None	None	None	None	None	No livestock grazing on the portions of the proposed ACEC south of US Hwy 380 & the 2 portions straddling US Hwy 70
Use Authorization	Currently 192,125 AUMs on 114 allotments	Same as No Action	Same as No Action	Same as No Action	Same as No Action	155,615 AUMs on 114 allotments
Changes in Numbers	Changes based on monitoring data and, assessments of the Standards of Public Land Health in consultation with the allotment holder	Same as No Action	Same as No Action	Same as No Action	If an allotment's base property is sold & the buyer does not wish to graze livestock, the AUMs would be place in Voluntary Non-Use.	5-yr Moratorium removes AUMs on 32 allotments in portions of the proposed ACEC. In the remainder of the proposed ACEC (the Adaptive Management Area) experimental reductions would be made.
Range Improvements	Priority given to the projects designed to move towards achieving the Standards	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Voluntary Relinquishment of Grazing	None	Option for Prairie-chicken reserves in Planning Area. Allotment holder's choice to do so. BLM would close allotment to grazing for life of this plan amendment. Closure may or may not be carried forward when plan is revised.	Same as Alternative A	Same as No Action	Same as No Action	Same as No Action
Participation in Conservation Programs	Allotment holders neither encouraged nor discouraged from participating	Allotment holders are encouraged to participate in conservation programs that are consistent with the seasonal nesting and brood-rearing habitat requirements for Prairie-chicken.	Same a Alternative A	Same as No Action	Same as No Action	Same as No Action

COMPARISON OF ALTERNATIVES

TABLE 2-13F WILDLIFE* NOTE: *Many of the management prescriptions meant to protect, maintain and enhance habitat for special status species habitat are described in the other resource sections of this chapter.

TOPIC	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Lesser Prairie-chicken Core Habitat Areas	Established within Roswell Field Office only	Prairie-chicken Habitat Core Areas replaced with the CMA & PPA	Prairie-chicken Habitat Core Areas replaced with a CMA larger than Alternative A & PPA	Same as No Action	Prairie-chicken Core Areas removed. Surface Use & Occupancy Requirements (SUORs) applied only to occupied habitat	Prairie-chicken Core Areas replaced by proposed ACEC
Lesser Prairie-chicken Timing & Noise Restrictions	No geophysical exploration, drilling or other development in chicken habitat from March 15 to June 15 between 3 am to 9 am. Point sources of noise in chicken habitat muffled to 75 db measured 30 feet from the source.	Current stips maintained only as needed & active leks defined as active within 2 yrs. Exhaust noise not to exceed 75 db measured 30 feet from source	Timing expanded to March 1 – June 15 in Planning Area Exceptions considered up to March 15. No exceptions considered after that date. Exhaust noise not to exceed 75 db measured 30 feet from source.	Same as No Action	Same as No Action	Same as No Action
Sand Dune Lizard	No surface disturbance in occupied habitat or within up to 100 meters of suitable habitat.	Same as No Action	No surface disturbance in dune complexes in lizard habitat. See the Chapter 2 Minerals section for prescriptions of this alternative.	Same as No Action	No surface disturbance in occupied habitat	Same as No Action
Playas & Alkali Lakes	No surface disturbance within up to 200 meters	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Predator Control	1997 Roswell RMP sets up conditions & protocol for predator control	Encouraged to increase Prairie-chicken nesting success	Encouraged to increase Prairie-chicken nesting success	Same as No Action	Same as No Action	Same as No Action
Recovery Plans	Plans for Federally-listed species would be implemented, including reintroduction of native species in coordination & cooperation of local governments	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Fence Enclosures	Would be considered for small areas only to protect special status wildlife or plant species; or special habitat features.	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Habitat Management Plans (HMP)	Existing HMPs may be modified as result of RMPA & done with public participation & NEPA .	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action

COMPARISON OF ALTERNATIVES

TABLE 2-13G RECREATION

TOPIC	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Special Recreation Management Areas	Mescalero Sands North Dune OHV Area & Hackberry Lake Intensive ORV Area	Same as No Action	Adds Square Lake OHV Area	Same as No Action	Same as No Action	Same as No Action
Recreation Permits for Lesser Prairie-chicken Observation	None	Same as No Action	If visitation begins to negatively impact lesser prairie-chicken, a permit system would be instituted.	Same as No Action	Same as No Action	Access to proposed ACEC for recreation by permit only
Timing & Noise Restrictions	None	Same as No Action	Generators associated with recreation uses not allowed in or near leks from March 1-June 15 from the hours of 3 am to 9 am.	Same as No Action	Same as No Action	Same as No Action
Recreation Opportunity Spectrum	ROS designation of Planning Area is rural & natural	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action

COMPARISON OF ALTERNATIVES

TABLE 2-13H OFF-HIGHWAY VEHICLE MANAGEMENT

TOPIC	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Open to OHV Use	Mescalero Sand North Dune OHV Area, Hackberry Lake Intensive ORV Area, CFO portion of the Planning Area	Mescalero Sand North Dune OHV Area, Hackberry Lake Intensive ORV Area	Mescalero Sand North Dune OHV Area, the open dunes of Shugart In Hackberry Lake & Square Lake OHV Areas	Same as No Action	Same as No Action	Same as No Action
Limited to Designated Roads & Trails	Roswell portion of the Planning Area, Maroon Cliffs, portion of Laguna Plata, Bear Grass Draw, Poco Site	Planning Area (including the Carlsbad portion), Maroon Cliffs, portion of Laguna Plata, Bear Grass Draw, Poco Site	Planning Area (including the Carlsbad portion), the interdune portions of Hackberry Lake & Square Lake OHV Areas, Maroon Cliffs, portion of Laguna Plata, Bear Grass Draw, Poco Site	Same as No Action	Same as No Action	Same as No Action
Closed to OHV Use	Mathers RNA, Mescalero Sands ACEC, portions of Laguna Plata,	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Same as No Action
Designated Roads & Trails	Transportation planning with route designation plan pending in Roswell portion of Planning Area. No such pending in Carlsbad portion	Review current designations for adequacy of habitat protection	Transportation planning with route designation plan pending in entire Planning Area.	Same as Alternative A	Same as No Action	Transportation planning with route designation plan pending in the proposed ACEC. Outside the proposed ACEC, same as No Action
Seasonal Use of Established OHV Areas	Not proposed	Same as No Action	If needed, timing & noise restriction would not allow OHV use from March 1 – June 15 from the hours of 3 am to 9 am	Same as No Action	Same as Alternative B	Same as No Action
Mescalero Sands North Dune OHV Area	Expansion from current 562 acres to 1,553 acres.	No expansion	Expanded in 3 phases if no conflicts with habitat protection	Same as Alternative A	Only Phase 1 expansion if no conflicts with habitat protection	Same as No Action
Hackberry Lake Intensive ORV Area	Current management continues	Same as No Action	Designation changed to limited to designated roads & trails in inter dune area. Open dunes in Shugart area to remain as open to OHV use.	Same as Alternative A	Same as No Action	Same as No Action
Proposed Square Lake OHV Area	Not proposed	Same as No Action	Established only if possible habitat conflicts eliminated or mitigated. Would establish management of an area already used by the public. Limited to vehicles less than 55 inches wide. OHV use limited to designate roads & trails in inter dune area. Dunes designated as open to OHV use	Same as No Action	Same as No Action	Same as No Action

COMPARISON OF ALTERNATIVES

TABLE 2-13I SPECIAL MANAGEMENT AREAS

TOPIC	NO ACTION ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B (PREFERRED)	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
Areas of Critical Environmental Concern (ACECs)	Mescalero Sands ACEC	Same as No Action	Same as No Action	Same as No Action	Same as No Action	Establishes the Lesser Prairie- chicken ACEC as 4 separate tracts. Incorporates the Mescalero Sands ACEC & eliminates the dual designation.
Special Management Areas	Mescalero Sands North Dune OHV Area, Mathers RNA ,Hackberry Lake Intensive ORV Area, Maroon Cliffs, Laguna Plata, Bear Grass Draw, Poco Site	Same as No Action	Criteria for establishing Square Lake OHV Area	Same as No Action	Same as No Action	Same as No Action

3 - Affected Environment



CHAPTER 3

AFFECTED ENVIRONMENT

INTRODUCTION

This chapter describes the physical, biological, social and economic characteristics of the Planning Area that influence the resolution of planning issues or that affect or are affected by the alternatives described in Chapter 2. This description of the affected environment serves as a baseline for analyzing and determining the effects on resources from various alternatives. The information in this chapter is also contained in the Analysis of the Management Situation (AMS). The AMS is available for review at Carlsbad and Roswell Field Offices.

In this chapter, resources are discussed in the context of the Planning Area. Socio-economic factors are discussed in the context of the Chaves, Eddy, Lea and Roosevelt counties and the communities adjacent to the Planning Area to permit assessment within the regional economy.

RESOURCES

Physiography and Topography

The Planning Area consists of the broad high plains east of the Pecos River below the escarpment known as the Caprock. Most of this area consists of sandy plains and sand dunes that slope to the west. Outside the sand dunes, the topography generally consists of slopes less than 10 percent. The area contains no perennial streams, and the only bodies of water are ephemeral playas.

Climate

The climate in Planning Area is an arid to semiarid continental climate with mild winters and hot summers. Average annual precipitation ranges from 10 to 16

inches. Over half the yearly precipitation falls during July, August, and September, when moist air masses move into the region from the Gulf of California. Fall, winter, and spring are relatively dry seasons.

The average annual temperature is 62 F. Maximum temperatures average 92 F in July, although temperatures more than 100 F are frequent. Minimum temperatures average 28 F in January, although temperatures do occasionally dip below 0 F. The average growing season is 220 days in the eastern plains.

Wind speeds average about 12 mph with the spring months of March through May being the windy season. Dry, gusty winds, predominately from the west, may exceed 50 mph. These winds, blowing across dry soils, occasionally cause severe afternoon dust storms.

Lands and Realty

The Bureau of Land Management's (BLM) lands and realty program provides for land use authorization, acquisition, use, disposal, and adjustment of land resources and maintains historic records for these ownership transactions. Some of the primary facets of the program are outlined below.

Rights-of-Way (ROWs)

The ROW program is the most active portion in terms of the number of cases processed. These existing ROWs are primarily for oil/gas related land use actions. Pipelines, oil/gas lease roads, and electric line ROWs are the most common authorizations. Land referred to as split-estate, Federally-owned surface and private/State-owned subsurface, also

require a ROW for land use authorizations. The Planning Area also has numerous communications site ROWs. These communication site ROWs include cellular telephone, paging, radio repeaters, microwave transmission, and seismograph monitoring sites.

Leases, Permits, and Easements

Section 302 of the Federal Land Policy and Management Act of 1976 (FLPMA) provides the BLM authority to issue, at its discretion, leases, permits, and easements for the use, occupancy, and development of public land. Any use not specifically authorized under other laws or regulations and not specifically forbidden by law may be authorized under this section of FLPMA. Uses which may be authorized include residential, agricultural, industrial, and commercial, and uses that cannot be authorized under the primary ROW authorities. Some specific examples of uses authorized under this authority include commercial filming, equipment storage sites, and ski resorts. Section 507 of FLPMA, rather than Section 302, is the only authority for land use authorizations for other Federal agencies.

Land Classification

A land classification is a process required by law for determining the suitability of BLM public land either for certain types of disposal or lease under the public land laws or for retention under multiple-use management.

Land Acquisition

Acquisitions via exchange, purchase of land and easements, or donation are important components of the BLM's land management strategy. The agency acquires land when it is in the public interest and consistent with approved land use plans. The BLM's land acquisition program is designed to:

- Improve management of natural resources through consolidation of public, State trust, and other Federal lands where agencies have compatible land management missions;
- Secure key property necessary to protect endangered species, promote biological diversity, increase recreational opportunities, enhance wildlife habitat, provide access to public waters and public land, and preserve archaeological and historical resources; or
- Implement specific acquisitions authorized by Acts of Congress by acquiring minimal non-Federal lands or interest in lands.

Exchanges: Public land may be exchanged by the BLM for lands owned by corporations, individuals, State and local governments, or other legal entities legally capable of holding title to and conveying land. Except for those exchanges that are Congressionally mandated or judicially required, exchanges are voluntary and discretionary transactions with willing landowners that serve as a viable tool for the BLM to accomplish its goals and mission. The lands to be exchanged must be of equal monetary appraised value and located within the same State. Exchanges must also be in the public interest and be in conformance with applicable BLM land use plans.

Purchases and Donations: The BLM has the authority to purchase land or interests in land. Purchase is not as widely used as exchange to acquire fee title to non-Federal lands. However, the agency does occasionally purchase non-Federal lands to acquire key natural resources or to acquire legal ownership to land which enhances the management of existing public land and resources. The primary funding authority for these purchases is the Land and Water Conservation Act. Funding is Congressionally limited to specific project areas.

The BLM also occasionally receives gifts (donations) of land or interests in land where an entity elects not to receive the market value for the interests being conveyed.

Sales

The BLM's general sale authority for public land is Section 203 of FLPMA (1976). However, the agency does not offer much land for sale. FLPMA requires that public land be retained in public ownership, unless, as a result of land use planning, disposal of certain parcels is warranted. Also, tracts of land that are designated in BLM land use plans as potentially available for disposal are more likely to be conveyed out of Federal ownership through a sale rather than an exchange. Public land must be sold at not less than fair market value and meet the very specific sale criteria of FLPMA. Public land proposed for sale generally has low resource value.

Minerals

Fluid Minerals

The fluid minerals program provides opportunities for leasing, exploration, and development of oil and gas resources while protecting other resource values. Land is available through a leasing process for competitive and noncompetitive leases.

The public land and Federal mineral estate in the Planning Area are available for orderly and efficient development of mineral resources. All mineral leases are issued with needed restrictions to protect the environment from releases of hazardous, toxic, and waste materials.

Stipulations to minimize the impacts that oil and gas operations may cause to other resources, uses, and users are attached to oil and gas parcels at the time of lease issuance.

Currently, the BLM New Mexico State Office holds four competitive oil and gas lease sale auctions a year. The Competitive Oil and Gas Lease Sale Notice comprises Federal minerals nominated for inclusion in a sale by entities interested in leasing the oil and gas rights, or Federal minerals offered through Bureau motion (unleased Federal minerals subject to drainage, or included within a communitization or unit agreement).

Since 1975, approximately 23,455 wells have been drilled on all ownerships in southeast New Mexico. Of that number approximately 10,122 well drilled on Federal mineral estate during that time period. (See Appendix 7, Reasonable and Foreseeable Development.)

In the Planning Area approximately 72 percent of the Federal mineral estate is currently under lease for oil and gas development. There are approximately 3,514 oil and gas leases (see Map 2-1, Leasing) and approximately 11,230 wells (see Map 2-2, Well Data) in the Planning Area.

Saleable Minerals

The salable minerals program provides opportunities for exploration and development of sand, gravel, caliche and other lower value mineral materials while protecting other resource values.

The Planning Area is open to the sale of mineral materials. Sales are considered on a case-by-case basis. Stipulations to protect important resource values are based on interdisciplinary review and analysis of individual proposals. Stipulations to minimize the impacts that operations may cause on other land resources, uses, and users are placed in advance of each mineral sale.

Stipulations pertaining to prevention and mitigation of hazardous material releases and compliance with applicable Federal, State, and local hazardous materials and safety regulations are required.

Solid Leasables

All public land would be open for the leasing of solid minerals, except those lands identified otherwise.

Management objectives for non-energy leasable minerals would be to continue to keep land available to leasing as necessary while maintaining important environmental values.

All land would be open to leasing with the applicable standard stipulations which are taken to prevent adverse environmental impacts to the environment and to minimize damage to public health and safety.

Lands requiring protection such as recreation areas, specially designated areas, and withdrawals shall remain closed to leasing or until such time as the areas or withdrawals are terminated.

In general, there are no known commercial deposits of the subject minerals within the Roswell Field Office Area. However the potential for a commercial deposit to be discovered does exist. The Roswell area has had prospecting permits for sulfur in the past.

The portions of the 497,000-acre potash area open to future leasing for oil and gas would continue to be leased with the Potash Stipulation (see Map 3-3).

Generally, the Potash Stipulation allows drilling for oil and gas if the drilling does not interfere with potash mining, does not create undue waste of potash, and does not create a hazard. In abandoning wells drilled under the stipulation, infiltration of oil, gas or water into potash deposits, mines or workings must be prevented. Lease notices would be used to alert

lessees to potential special requirements on exploration, drilling or production. Lease notices covering protection of potential cave or karst areas, protection of threatened or endangered or sensitive plant or animal species, and the use of the Alkali Lake and Hackberry Lake OHV areas would remain in use. Additional lease notices would be developed as needed.

Future increases in commodity prices with a corresponding increase in demand could allow some deposits to become economic. Similarly improvements in mining technologies could have the same effect. For most deposits though, deposits of significantly greater potential are known to exist in the Carlsbad Field Office and would likely be developed in response to demand before their deposits in the Roswell Field Office. Areas with high potential which are located adjacent to roadways, and developed areas should be kept open for development.

Coal Leasing

The public land in the Planning Area is not within a designated coal production region and coal leasing and development is not an issue for this document. If an application for a coal lease is received in the future, an appropriate land-use and environmental analysis, including the coal screening process, would be conducted to determine whether or not the coal areas applied for are acceptable for development and for leasing consideration. The RMP would be amended as needed.

Alternative Energy

In February 2003, the Departments of Energy and the Interior released the report, "Assessing the Potential for Renewable Energy on Public Land." This report can be viewed and downloaded at www.nrel.gov/docs/fy03osti/33530.pdf.

The report weighed factors for producing energy from concentrated solar power (CSP), photo-voltaic (PV), wind, biomass, and geothermal facilities. The report indicates the potential for producing energy from biomass and geothermal resources is low in southeast New Mexico and the Planning Area.

The report indicates the potential for producing wind energy in the Planning Area is poor to fair. Poor is defined as Class 2 with wind speeds of 12.5 to 14.3 miles per hour measured at an altitude of 50 meters. Fair is defined as Class 3 with wind speeds of 14.3 to 15.7 miles per hour measured at an altitude of 50 meters. Approximately 80 percent of the public land within the Planning Area falls within the Class 2 category.

The report indicates the potential for CSP and PV in the Planning Area are good, with between 5.5 to 6.5 kWh/m²/day (kilowatt hour per square meter per day) on average.

Soils

Soils are affected by vegetation, geology, wind erosion, and water erosion. Factors that currently affect soils include livestock grazing management, oil and gas development, recreational use, and brush control treatments.

Soils within the Planning Area are mostly level with sandy textures and high concentrations of calcium carbonate in the substratum. These sandy soils are highly susceptible to wind erosion. Wind action has produced an undulating topography with frequent dunes. Areas of steep rocky soils and gypsum soils are also present. The Gypsum Complex soils are highly susceptible to erosion. Once disturbed, these gypsum soils are extremely difficult to re-vegetate due to their high salt content and the frequent droughts in the region. Detailed information on soils in the Roswell and Carlsbad Field Office areas is available in the Soil Survey of Chaves County, N.M.

Northern Part; Soil Survey of Chaves County, N.M. Southern Part (SCS 1980); Soil Survey of Lea County, N.M. (SCS 1974); and Soil Survey of Eddy Area N.M. (SCS 1971).

Water Resources

Surface waters within the Planning Area are influenced by geology, precipitation, and water erosion. Factors that currently influence surface water resources include livestock grazing management, oil and gas development, recreational use, and brush control treatments. Surface waters within the Planning Area are located in ephemeral streams, ephemeral springs, ephemeral playas, and stock tanks. Water quality impaired streams are not presently found within the Planning Area (2004-2006 State of New Mexico Integrated Clean Water Act 303(d) and 305(b) Report).

Groundwater within the Planning Area is influenced by geology and precipitation. Factors that influence groundwater resources include livestock grazing management, oil and gas development, groundwater pumping, and possible impacts from brush control treatments.

Groundwater within the Planning Area can be obtained from groundwater aquifers located within the Rustler, Castile, Tansill, Yates, Seven Rivers, Queen, Grayburg, Artesia, Ogallala, Chinle Formation, Capitan and San Andres Limestones, Glorieta and Santa Rosa Sandstones, and the Dockum Group. Most of the groundwater occurs as unconfined aquifers. Groundwater occurs as confined aquifers in the San Andres Formation under artesian conditions. The depth to shallow unconfined groundwater varies from 1 foot to depths of 400 feet throughout the Planning Area (New Mexico Office of the State Engineer data). The depth to confined groundwater can occur at depths greater than 400 feet.

Most of the groundwater in the Planning Area is used for industrial, rural, domestic, and livestock purposes.

Floodplains

One hundred-year floodplains or floodplains within the Planning Area are located in ephemeral playa lakes and ephemeral streams.

The legal locations for floodplains located in ephemeral playas are:

<u>TWN</u>	<u>RNG</u>	<u>Section</u>	<u>Aliquot Portion</u>
5 S	29 E	Section 35	SW NE (pot and sod)
6 S	29 E	Section 35	NW SE
6 S	30 E	Section 3	SE SW (pot and sod)
		Section 11	S NW
			SE SW
8 S	30 E	Section 5	SE NW , E SE , SW SE
		Section 8	E NE
		Section 18	NE
		Section 7	SE
16 S	30 E	Section 5	SW NW , NW SW ,
		Section 6	SE NE , NE SE
		Section 18	SW NE , NW SE
		Section 13	SE SW
		Section 24	NE NW
17 S	29 E	Section 26	S SW
		Section 35	NW
17 S	30 E	Section 21	W
		Section 25	SW SW
		Section 26	SE SE
		Section 35	NE NE
17 S	31 E	Section 6	SE
		Section 19	SE SW , N NW
18 S	29 E	Section 13	NW
		Section 24	SE SW
18 S	30 E	Section 3	E NW , W NE
		Section 6	W SE
		Section 22	SE SE
		Section 23	SW SW
		Section 27	NE NE
		Section 26	NW NW
		Section 26	SE

The legal locations for floodplains located in ephemeral streams are:

<u>TWN</u>	<u>RNG</u>	<u>Section</u>	<u>Aliquot Portion</u>
		<u>Taylor Draw</u>	
17 S	31 E	Section 1	SE
		Section 12	E
		Section 13	N , SW
		Section 14	SE
		Section 23	N , N S
		Section 22	E
		Section 27	N , NW SW
		Section 28	SE
		Section 32	SE
		Section 33	N , NW
18 S	30 E	Section 1	SE SE
18 S	31 E	Section 5	N , NW
		Section 6	S
		<u>Bear Grass Draw</u>	
18 S	29 E	Section 14	W SW
		<u>Un-named draw</u>	
15 S	29 E	Section 6	S S

Air Quality

Current air quality conditions are good in the Planning Area. The air quality meets State or Federal ambient air quality standards.

Factors that currently affect air quality include dust from livestock herding activities, dust from recreational use, dust from construction activities, dust from use of roads for vehicular traffic, pollution emission sources from industrial facilities, pollution emission sources from oil and gas development, and chemical odors.

Standards for Public Land Health and Guidelines for Livestock Grazing

BLM recently amended the Carlsbad and Roswell Field Office RMP to incorporate the *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management* (Jan 2001), which established standards for public land health and guidelines for livestock grazing management in New Mexico. The standards describe conditions needed for healthy, sustainable public rangeland and relate to all uses of public land. The livestock grazing guidelines are management practices that are applied if it has been determined that grazing practices are responsible for non-achievement of a Standard. They are designed to improve public land health and are to be implemented at the watershed, allotment, or pasture level. Based on discussions in the above-mentioned document, it is expected that about 20 percent of grazing allotments State wide may not meet one or more of the standards, which could lead to 20 percent reduction in animal unit months (AUMs). It was also assumed that of those not meeting a standard, 22 percent would no longer use the Federal permit, due to increased regulation and operating costs to the ranch.

To date, between the two Field Offices, approximately 400,000 acres of assessments within the entire Pecos District have been completed. Of these acres,

about 2 percent were found to not meet a standard. While assessments are just starting within the Planning Area, similar results are expected.

Vegetation

Vegetation within the Planning Area is influenced by soil type, temperature, amount, and timing of precipitation, elevation, topographic position, and human impacts. Human impacts include livestock grazing management, oil/gas development, recreational use, and brush control treatments. Several distinct vegetative community types can be found associated with shinnery oak distinguished primarily by different combinations of bluestems, dropseeds, gramas, three-awns, witchgrass, and various forb and yucca species. A mix of shinnery oak, tall grasses such as sand or little bluestem, dropseeds and forbs is indicative of good to excellent range condition. When shinnery oak is found with midgrasses, including various grama, dropseed, and three-awn species, and forbs, range condition is typically fair to good. In the deeper sandhill areas, where shinnery oak dominates and there are few grasses and forbs, range condition generally ranges from poor to fair.

The northern portion of the Planning Area falls within the Southern High Plains (HP) and Pecos-Canadian Plains and Valleys (CP) Major Land Resource Areas (MLRAs), while the southern portion is within the Southern Desertic Basins (SD) MLRA. The grass component of the HP and CP areas is dominated by bluestems and gramas, while that of the SD area is mostly dropseeds and threeawns. Vegetative characteristics of the Planning Area can be found in the Roswell Resource Area Draft RMP/Carlsbad Resource Area RMPA (September 1994). Descriptions relative to the Carlsbad Field Office can be found on pages 3-9 and 3-10, while those dealing with the Roswell Field Office can be found on page 3-41 and Appendix 11.

Using the desired plant community (DPC) descriptions from the Roswell Field Office, the three major vegetative communities within the Planning Area are the grassland community, shinnery oak-dune community, and the mixed desert shrub community. The grassland and shinnery oak-dune communities make up the largest portion of the Planning Area. The grassland community can be broken down into several subtypes, with the grass rolling upland and mesquite grassland types being the most common. These DPCs were adopted by and described in the 1997 Roswell RMP.

Vegetation management is based on DPC descriptions for the Roswell Field Office and Natural Resources Conservation Services (NRCS) Ecological Site Descriptions (ESD) for the Carlsbad Field Office. For the Roswell Field Office, DPC is a plant community that provides the vegetation attributes required to meet or exceed RMP vegetation objectives. The DPC must be within the ecological site's capability to produce these attributes through natural succession, management action, or both.

These vegetative communities described for the Roswell Field Office DPC were derived from the NRCS ESD. Ecological Site Descriptions and their corresponding vegetative community can be found at BLM or NRCS offices in Roswell and Carlsbad or at <http://www.nm.nrcs.usda.gov/technical/fotg/section-2/ESD.html>. From this site, specific information can be found by clicking on the relevant MLRA tab, such as CP-2 or SD-3.

Within the Planning Area, both Field Offices have over 20 years of rangeland monitoring data collected at permanently established study plots. This data provides information about range condition, amount of annual vegetative production, composition and cover of vegetation, utilization amounts, and precipitation. In general terms, this data indicates that range condition is in the high fair to low good class and trend data is static to slightly upward. When the

vegetative composition monitoring data for the Planning Area is summarized in terms of DPC, the grass component falls within the objectives, the forb component is low, and the shrub component is high. This is expressed numerically as:

GRASSLAND COMMUNITY			
	Grasses	Forbs	Shrubs/Trees
DPC	30-85%	10-15%	1-10%
Monitoring	65%	8%	27%
SHINNERY OAK-DUNE COMMUNITY			
	Grasses	Forbs	Shrubs/Trees
DPC	50-70%	10-15%	25-40%
Monitoring	50%	5%	45%
MIXED DESERT SHRUB COMMUNITY			
	Grasses	Forbs	Shrubs/Trees
DPC	55-75%	10-20%	15-20%
Monitoring	58%	9%	33%

For Fiscal Year (FY) 2006, approximately 47,000 acres of land are scheduled for brush control treatments. Of this, about 32,000 acres are public land. The primary target is mesquite, with some broom snakeweed targeted as well. The intent of these treatments is to move towards the attributes of DPC described above.

Non-Native and Invasive Species

One of the greatest impacts on the maintenance of healthy communities is the rapid spread of invasive, non-native weeds. These invasive weeds are very aggressive and have the ability to out-compete native plant communities. Severe, extensive, and often permanent degradation frequently results. While it is very important to control existing infestations, the most effective and economical weed management technique is to prevent weed spread. Weeds can easily be spread by a wide variety of activities BLM conducts or authorizes. Furthermore, weeds frequently thrive when land is disturbed.

Of the weeds listed on the Noxious Weed List for the State of New Mexico (NMDA,

1999), those of immediate concern to the BLM are African rue (*Peganum harmata*) Class B, malta starthistle (*Centaurea melitensis*) Class B, yellow starthistle (*Centaurea repens*) Class A, Russian knapweed (*Acroptilon repens*) Class B, and saltcedar (*Tamarix ramosissima*) Class C. These species have invaded public land within the Planning Area, mainly along oil/gas lease roads, on oil/gas pads, and along pipeline and power line routes.

Within the Planning Area, approximately 200 acres per year are treated for noxious weeds. African rue has been the main target, accounting for about 150-175 acres per year. Small populations of starthistles and Russian knapweed have also been treated. Costs average 100 dollars per acre for African Rue control, 50 dollars per acre for knapweed control, and 30 dollars per acre for thistle control.

Wildlife

The BLM wildlife program is responsible for the management of wildlife habitat on public land to ensure wildlife populations that depend upon that habitat are sustainable for future generations. Management of wildlife populations is the responsibility of the New Mexico Department of Game and Fish (NMDGF). The lead for management of migratory and Federally listed threatened, endangered and proposed species is the U.S. Fish and Wildlife Service (USFWS).

The overall wildlife objective is to manage habitats on public land for the conservation and rehabilitation of fish, wildlife, and plant resources consistent with multiple use management principles. Wildlife habitat within the Planning Area is affected by numerous variables.

Standard Habitat Sites and Features

Wildlife within the Planning Area is associated with specific habitat sites or

features as identified by the BLM. These standard habitat sites (SHSs) and features are grouped according to the vegetation type, landforms, soil types, and specific habitat niches that are critical for species survival. The SHSs correspond to the vegetation types presented in the Vegetation Section of this document and in Table 3-1.

TABLE 3-1 VEGETATION TYPES CORRESPONDING TO STANDARD HABITAT SITES	
VEGETATION TYPE	SHS
Grasslands	Playas Short grass prairie Mid grasslands Tall grasslands
Shinnery oak dune	Shinnery flats Shinnery dune Shinnery dune/Blowouts Sand sage shrubland
Mixed desert shrub	Mesquite grasslands Escarpment shrubland
SOURCE: Roswell RMP, 1997 and Roswell East EIS, 1979.	

Big Game

Big game species that occur within the Planning Area are desert mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), javelina (*Dicotyles tajacu*), and mountain lion (*Felis concolor*). All species can be found throughout the Planning Area; however, mule deer tend to reside more commonly within the shinnery oak dune country and the Caprock escarpment. Pronghorn utilize the prairie grasslands and frequent the shinnery oak dune habitats. Javelinas prefer the mixed desert shrub or mesquite grasslands community around Carlsbad, but have been found farther north towards Kenna utilizing shinnery oak dune habitat. There have been confirmed reports and occasional sightings of mountain lions within the mesquite grasslands, shinnery oak dune and the Caprock escarpment of the Planning Area.

Small Game

Small game species occurring within the Planning Area include scaled quail (*Callipepla squamata*), mourning dove (*Zenaidura macroura*), and occasionally bobwhite quail (*Colinus virginianus*). All of these species occupy the various vegetation types with some species preferring a denser shrub component. Scaled quail is an opportunistic feeder and is reliant upon insects as a food source, particularly during nesting and juvenile periods. Population levels for all small game bird species fluctuate depending in part on precipitation. Black-tailed jackrabbit (*Lepus californicus*) and desert cottontail (*Sylvilagus audubonii*) are common throughout the area and can be found in all vegetation communities.

Amphibians and Reptiles

According to "Amphibians & Reptiles of New Mexico" dated 1996, a total of 10 amphibians and 31 species of reptiles are known to occur within the Planning Area. See Table 3-2.

Birds

There are approximately 60 species of birds that occur or have the potential to occur within the habitat types of the Planning Area. See Table 3-3.

Mammals

There are approximately 43 species of mammals that occur or have the potential to occur within the habitat types of the Planning Area. See Table 3-4.

Fish

There are no fish species or habitat available to support fish within the Planning Area.

Special Status Species

Under the Endangered Species Act (ESA), the Bureau is mandated to conserve and protect threatened and endangered (T&E) species and designated critical habitat on public land.

BLM policy for special status species is contained in BLM Manual 6840. Species proposed for listing as T&E shall be managed with the same level of protection as listed species. With candidate species, the BLM shall carry out management consistent with the principles of multiple-use for the conservation of these species and their habitat. The BLM must ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered, and that BLM actions do not adversely affect the likelihood of recovery of any T&E species. Protection and management of all special status species is a high priority and coordinated with other programs and activities as needed to meet management objectives.

BLM systematically gathers data on candidate species and forwards it the USFWS. Inventory/monitoring for Federal candidate and State listed species are conducted sporadically as funding and manpower permits. Where monitoring finds threats to these populations, actions are taken to protect the species and its habitat. Management actions for special status species are conducted on split-estate land where BLM authorizes an activity to ensure compliance with the ESA.

When revising or developing resource activity plans, specific objectives and actions stated in the recovery plans would be incorporated.

The BLM shall carry out management for the conservation of State-listed species. State laws protecting these species apply to all BLM programs and actions to the extent

that they are consistent with FLPMA and other Federal laws.

Any Federally-authorized, funded, or implemented actions that “may affect” a

Federally listed threatened or endangered species or proposed species must undergo Section 7 consultation with the USFWS on a case-by-case basis under ESA.

TABLE 3-2

AMPHIBIANS AND REPTILES OCCURRING OR POTENTIALLY OCCURRING IN THE PLANNING AREA

COMMON NAME	SCIENTIFIC NAME
Tiger Salamander	<i>Ambystoma tigrinum</i>
Couch's Spadefoot	<i>Scaphiopus couchii</i>
Plains spadefoot	<i>Spea bombifrons</i>
New Mexico spadefoot	<i>Spea multiplicata</i>
Barking frog	<i>Hylactophryne augusti</i>
Great plains toad	<i>Bufo cognatus</i>
Green toad	<i>Bufo debilis</i>
Plains leopard frog	<i>Rana blairi</i>
Ornate box turtle	<i>Terrapene ornata</i>
Yellow mud turtle	<i>Kinosternon flavescens</i>
Collared lizard	<i>Cryptophytus collaris</i>
Greater earless lizard	<i>Cophosaurus texanus scitulus</i>
Lesser earless lizard	<i>Holbrookia maculata</i>
Texas Horned Lizard	<i>Phrynosoma cornutum</i>
Round-tail horned lizard	<i>Phrynosoma modestum</i>
Sand-dune lizard	<i>Sceloporus arenicolus</i>
Prairie lizard	<i>Sceloporus undulatus</i>
Side-blotched lizard	<i>Uta stansburana</i>
Chihuahuan spotted whiptail	<i>Cnemidophorus exsanguis</i>
Checkered whiptail	<i>Cnemidophorus grahamii</i>
Texas spotted whiptail	<i>Cnemidophorus gularis</i>
Little striped whiptail	<i>Cnemidophorus inornatus</i>
Six-lined racerunner	<i>Cnemidophorus sexlineatus</i>
Western whiptail	<i>Cnemidophorus tigris</i>
Many lined skink	<i>Eumeces multivirgatus</i>
Great plains skink	<i>Eumeces obsoletus</i>
Texas blind snake	<i>Leptotyphlops dulcis</i>
Glossy snake	<i>Arizona elegans</i>
Western hognose snake	<i>Heterodon nasicus</i>
Night snake	<i>Hypsiglena torquata</i>
Common king snake	<i>Lampropeltis getula</i>
Milk snake	<i>Lampropeltis triangulum</i>
Coachwhip	<i>Masticophis flagellum</i>
Bull snake (gopher)	<i>Pituophis melanoleucus</i>
Longnose snake	<i>Rhinocheilus lecontei</i>
Ground snake	<i>Sonora semiannulata</i>
Plains black-headed snake	<i>Tantilla nigriceps</i>
Checkered garter snake	<i>Thamnophis marciauns</i>
Western diamondback rattlesnake	<i>Crotalus atrox</i>
Western rattlesnake	<i>Crotalus viridis</i>
Massasauga	<i>Sistrurus catenatus</i>

SOURCE: Roswell Field Office Database, 2004.

TABLE 3-3 AVIAN SPECIES OCCURRING OR POTENTIALLY OCCURRING IN THE PLANNING AREA			
COMMON NAME	SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAME
Turkey vulture	<i>Cathartes aura</i>	Brown-headed cowbird	<i>Molothrus ater</i>
Coopers hawk	<i>Accipiter striatus</i>	Barn swallow	<i>Hirundo rustica</i>
Northern harrier	<i>Circus cyaneus</i>	Verdin	<i>Auriparus flaviceps</i>
Rough-Legged hawk	<i>Buteo lagopus</i>	Bewicks wren	<i>Thryomanes bewickii</i>
Ferruginous hawk	<i>Buteo regalis</i>	Cactus wren	<i>Campylorhynchus brunneicapillus</i>
Red-Tailed hawk	<i>Buteo jamaicensis</i>	Western bluebird	<i>Sialia mexicana</i>
Swainsons hawk	<i>Buteo swainsoni</i>	Cedar waxwing	<i>Bombycilla cedrorum</i>
Harris hawk	<i>Parabuteo unicinctus</i>	Loggerhead shrike	<i>Lanius ludovicianus</i>
Golden eagle	<i>Aquila chrysaetos</i>	Eastern meadowlark	<i>Sturnella magna</i>
American kestrel	<i>Falco sparverius</i>	Western meadowlark	<i>Sturnella neglecta</i>
Common barn owl	<i>Tyto alba</i>	Pyrrhuloxia	<i>Cardinalis sinuatus</i>
Western screech owl	<i>Otus kennicotti</i>	Lark bunting	<i>Calamospiza melanocorys</i>
Great horned owl	<i>Bubo virginianus</i>	House finch	<i>Carpodacus mexicanus</i>
Burrowing owl	<i>Athene cinicularia</i>	Spotted towhee	<i>Pipilo maculatus</i>
Scaled quail	<i>Callipepla squamata</i>	Horned lark	<i>Eremophila alpestris</i>
Northern bobwhite	<i>Colinus virginianus</i>	Lark sparrow	<i>Chondestes grammacus</i>
Lesser prairie-chicken	<i>Tympanuchus pallidicinctus</i>	Grasshopper sparrow	<i>Ammodramus savannarum</i>
White-winged dove	<i>Zenaida asiatica</i>	Black-throated sparrow	<i>Amphispiza bilineata</i>
Mourning dove	<i>Zenaida macroura</i>	Sage sparrow	<i>Amphispiza belli</i>
Greater roadrunner	<i>Geococcyx californianus</i>	Brewers sparrow	<i>Spizella breweri</i>
Common nighthawk	<i>Chordeiles minor</i>	Cassins sparrow	<i>Aimophila cassinii</i>
Lesser nighthawk	<i>Chordeiles acutipennis</i>	Vesper sparrow	<i>Pooecetes gramineus</i>
Northern flicker	<i>Colaptes auratus</i>	White-crowned sparrow	<i>Zonotrichia leucophrys</i>
Ladder-backed woodpecker	<i>Picoides scalaris</i>	White-throated sparrow	<i>Zonotrichia albicollis</i>
Scissor-tailed flycatcher	<i>Tyrannus forficatus</i>	Bairds sparrow	<i>Ammodramus bairdii</i>
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>	Killdeer	<i>Chadrius vociferus</i>
Says phoebe	<i>Sayornis saya</i>		
Western kingbird	<i>Tyrannus verticalis</i>		
Brown thrasher	<i>Toxostoma rufum</i>		
Curve-billed thrasher	<i>Toxostoma curvirostre</i>		
Crissal thrasher	<i>Toxostoma crissale</i>		
Sage thrasher	<i>Oreoscoptes montanus</i>		
Northern mockingbird	<i>Mimus polyglottus</i>		
Chihuahuan raven	<i>Corvus cryptoleucus</i>		
SOURCE: Roswell Wildlife Database, 2004			

TABLE 3-4

MAMMALS OCCURRING OR POTENTIALLY OCCURRING IN THE PLANNING AREA.

COMMON NAME	SCIENTIFIC NAME
Cave myotis	<i>Myotis velifer</i>
Small-footed myotis	<i>Myotis ciliolabrum</i>
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>
Pallid bat	<i>Antrozous pallidus</i>
Long-legged myotis	<i>Myotis volans</i>
Raccoon	<i>Procyon lotor</i>
Black-tailed prairie dog	<i>Cynomys ludovicianus</i>
Striped skunk	<i>Mephitis mephitis</i>
Hognose skunk	<i>Conepatus mesoleucus</i>
Coyote	<i>Canis latrans</i>
Swift fox	
Kit fox	<i>Vulpes macrotis</i>
Mountain lion	<i>Puma concolor</i>
Bobcat	<i>Lynx rufus</i>
Badger	<i>Taxidea taxus</i>
Plains pocket gopher	<i>Geomys bursarius aernarius</i>
Silky pocket mouse	<i>Perognathus flavus</i>
Hispid pocket mouse	<i>Chaetodipus hispidus</i>
Plains pocket mouse	<i>Geomys bursarius aernarius</i>
Desert pocket mouse	<i>Perognathus penicillatus</i>
Nelson's pocket mouse	<i>Perognathus nelsoni</i>
Plains harvest mouse	<i>Reithrodontomys montanus</i>
House mouse	<i>Mus musculus</i>
Cactus mouse	<i>Peromyscus eremicus</i>
Deer mouse	<i>Peromyscus maniculatus</i>
Western harvest mouse	<i>Reithrodontomys megalotis</i>
Northern grasshopper mouse	<i>Onychomys leucogaster</i>
Gray shrew	<i>Notiosorex crawfordi</i>
Ord's kangaroo rat	<i>Dipodomys ordii</i>
Merriam's kangaroo rat	<i>Dipodomys merriami</i>
White-throated woodrat	<i>Neotoma albigula</i>
Southern plains woodrat	<i>Neotoma micropus</i>
Mexican ground squirrel	<i>Spermophilus macicanus</i>
Thirteen-lined ground squirrel	<i>Spermophilus tridecemlineatus</i>
Spotted ground squirrel	<i>Spermophilus spilosoma</i>
Rock squirrel	<i>Spermophilus variegatus</i>
Black-tailed jackrabbit	<i>Lepus californicus</i>
Desert cottontail	<i>Sylvilagus audubonii</i>
Porcupine	<i>Erethizon dorsatum</i>
Mule deer	<i>Odocoileus hemionus</i>
White-tailed deer	<i>Odocoileus virginianus</i>
Pronghorn antelope	<i>Antilocapra americana</i>
Javelina	<i>Dicotyles tajacu</i>
SOURCE: Roswell Wildlife Database, 2004	

The following are species that may occur or potentially occur within the counties of which the Planning Area is located in, but due to soils, vegetation, absence of perennial water, and other ecosystem variables within the Planning Area, these species are not known to occur within the Planning Area. The Federally endangered species are the northern aplomado falcon, interior least tern, Pecos gambusia, black-footed ferret, Kuenzler's hedgehog cactus, Sneed pincushion cactus, Koster's springsnail, Pecos assiminea snail, Roswell springsnail, and Noel's amphipod. Federally threatened species includes the bald eagle, Mexican spotted owl, Pecos bluntnose shiner, Pecos sunflower, gypsum wild-buckwheat, and Lee pincushion cactus. Federal candidate species include the Texas hornshell mussel.

The bald eagle is described as occupying the entire State of New Mexico, however no nesting activity is known to occur and the area may potentially be used as a flyover according to some databases.

The extreme southern portion of the Planning Area has been identified as being within the historic range of the aplomado falcon. However, no recent sightings or known nesting has occurred. Therefore no impacts are to be expected to this species.

Emphasis Species

The following describes the status, distribution and habitat of emphasis species: lesser prairie-chicken, sand dune lizard.

Both the sand dune lizard and lesser prairie-chicken are currently warranted for listing under the ESA and are the primary emphasis for this planning effort. Historical practices did not take into account the habitat requirements for these species and did not adequately address the significance of habitat fragmentation and other adverse impacts.

Lesser Prairie-chicken (*Tympanuchus pallidicinctus*)

Status: For the lesser prairie-chicken, a candidate species, the earliest systematic survey in Texas was conducted in 1940. At that time, the range of the lesser prairie-chicken encompassed portions of 20 counties. In addition to those counties, researchers reported that museum specimens existed for five additional counties, although there is uncertainty whether two of the five specimens were actually Greater Prairie-chicken and Attwater's prairie-chicken. Researchers considered the occupied range at that time to be a reduction from the historical range.

Description of the Species: Bailey (1928) describes the lesser prairie-chicken as follows:

Adult male: Head with a slight soft crest, neck with inflatable air-sacs, yellow on breeding season; upper-parts pale brownish, black barred in sets of threes, a wide brown bar enclosed by two narrow dusky bars, similarly barred. Adult female: Similar but neck tufts rudimentary. Young: Underparts yellowish-brown, feathers with conspicuous white shaft streaks and large black blotches; underparts yellowish-white, with grayish brown bars.

Distribution:

New Mexico

In New Mexico, in the 1920s and 1930s, the former range of the lesser prairie-chicken was described as all of the sandhill rangeland of eastern New Mexico, from Texas to Colorado, and west to Buchanan in De Baca County. Presently, the New Mexico Department of Game and Fish (NMDGF) reports that lesser prairie-chicken are known in portions of seven counties, and that they have apparently been extirpated from 3,346 square kilometers (1,292 square miles) of its original 22,390 square kilometer (8,645 square mile) range.

In New Mexico the lesser prairie-chicken is an upland game bird, although the hunting season has been closed since 1996. Estimates of occupied range in New Mexico over the last century suggest a pattern of decline and increase, including reoccupation of former range. In the 1950s, the population was estimated at 40,000 to 50,000, and by 1972, at 6,000 to 10,000 individuals. No recent estimates of population size are available. However, survey data from 1971 through 1997 analyzed by the New Mexico Natural Heritage Institute show a clear and substantial population decline after 1988, particularly in the southern periphery of their range.

Chaves, Eddy, Lea and Roosevelt Counties

Lesser prairie-chicken populations south of Highway 380 (Eddy and Lea County) in New Mexico on BLM properties and surrounding areas are rare, however, there have been sightings of scattered small groups and individuals. Intensive spring 2001 through 2005 lek surveys in the Carlsbad BLM Field Office area detected one active lek in 2001, 2002, 2003 and 2005 and two active leks in 2004.

Habitat: In southeastern New Mexico, lesser prairie-chickens exist in the shrub-dominated High Plains Bluestem Subtype by using mixed stands of tall grass and shinnery oak (Riley et al. 1992). The climax vegetation in these areas was probably dominated by mid and tall grasses, including sand bluestem, big bluestem, little bluestem, yellow Indian grass, prairie sandreed (*Calamovilfa longifolia*), and grama grasses, with smaller amounts of yucca (*Yucca* spp.), Harvard oak, sand sagebrush, mesquite (*Prosopis* spp.), and fragrant sumac (*Rhus aromatica*) (Morrissey, 1995). Lesser prairie-chickens in shinnery oak eat mostly plant material except in summer, when insects, mainly grasshoppers predominate. An absence of acorns in the diet probably relates less to

preference and more to the variability of shin-oak acorn production. Autumn diets primarily consist of shinnery oak acorns, short-horned grasshoppers (*Acrididae*), broom groundsel (*Senecio spartioides*) leaves, and insect galls from shinnery oak. Foods consumed in the winter primarily consist of shinnery oak acorns with lesser amounts of green vegetation and insects (Riley, Davis, and Smith, 1993).

Sand Dune Lizard (*Sceloporus arenicolus*)

Status: The Center for Biological Diversity and Chihuahuan Desert Conservation Alliance petitioned the USFWS on May 28, 2002 to list the sand dune lizard as an endangered species under the ESA. Recognizing the severity of the threats to the sand dune lizard, the USFWS recently made it a candidate for listing, giving it the highest priority for action a species can receive.

Description of the Species: The sand dune lizard is a small, light brown (often yellowish brown) lizard lacking dorsal pattern except for faint grayish brown dorso-lateral stripe on each side extending from head to tail, that buries itself in sand to avoid predators and regulate its body temperature. Lizards are active from 0800 until dusk during May, June, and July (Sena, 1985), but confined their activity during midday (1200-1400) to shaded areas beneath vegetation. Individuals are extremely wary, and are quick to seek shelter in burrows, beneath leaf litter or by burrowing in loose sand. Sand dune lizards feed upon ants and their pupae, small beetles (including ladybirds) and their larvae, crickets, grasshoppers, and spiders. Most feeding appears to take place within or immediately adjacent to patches of shinnery oak habitat.

Distribution:

Range-Wide/New Mexico

The sand dune lizard has the second smallest range of any lizard endemic to

North America, only occurring in a narrow crescent shaped area of southeastern New Mexico and in Andrews, Crane, Gaines, Ward and Winkler Counties of western Texas.

Within Chaves, Eddy, Lea and Roosevelt Counties

It has been found mainly on the Mescalero Sands, which extend in a broad arc from the vicinity of San Juan Mesa in northeastern Chaves County southward and eastward through eastern Eddy County and southern Lea County (Sena, 1985).

Habitat: The sand dune lizard is restricted to the vicinity of active and semi-stabilized sand dunes within the Planning Area (Sena, 1985), an area of rolling dunes in southeastern New Mexico found on lands administered by State, Federal and private entities. These dunes occur to an elevation of 1190 m above sea level and support scattered stands of shinnery oak (*Quercus havardii*) and sand sage (*Artemisia filifolia*) as co-dominant plant species (Sena, 1985). Significant reductions of lizard population sizes are associated with surface disturbance and removal of shinnery oak due to activities such as oil and gas development and herbicide treatments and ROWs.

Livestock Management

The grazing history of the Planning Area is similar to that of much of the southwestern United States prior to the mid-twentieth century. A small number of ranchers used intermixed private and public land to support livestock grazing within the Planning Area. The Federal grazing program in the Planning Area was initiated with the implementation of the Taylor Grazing Act in 1934. The program has since been administered by BLM (previously the Grazing Service and the Division of Grazing).

Within the Planning Area, livestock grazing occurs on approximately 850,000 acres and includes all or parts of 114 grazing allotments (see Map E-2 and Appendix 9). Allotments consist of a combination of private, State trust, and public land. Cattle and horses are authorized to graze on public land within these allotments. Occasional unauthorized grazing occurs from private properties that are adjacent to public land but are not part of a grazing allotment.

In pastures that are regularly grazed yearlong, there is often a shift away from perennial grass species such as bluestems, switch grass, side-oats grama, and giant dropseed towards a greater abundance of annual forbs and annual grasses (sandbur, purple sand grass, fringed signal grass, false buffalo grass) and a different mix of perennial grasses. Unlike other shrubs, shinnery oak does not spread rapidly into grassland areas when grass cover declines. However, high stocking densities of cattle may effectively transform some areas from grass-shrub co-dominance to systems dominated by shinnery oak.

Livestock use on each allotment varies each year depending on current conditions and livestock management needs. Livestock use can be measured by the number of cattle or yearlings, or by animal unit months (AUMs). An AUM is the amount of forage needed by one animal unit (e.g., a 1,000 pound cow and calf) for one month. A total of 192,125 AUMs are permitted for use within the Planning Area and approximately 107,083 AUMs were authorized during the 2004-2005 grazing year. Fluctuations in annual use have occurred due to factors such as weather conditions and the price of livestock. Allotments vary in size from approximately 40 acres to over 100,000 acres, with grazing preferences ranging from less than 20 AUMs to nearly 38,000 AUMs. Currently, there are 35 "M" category (Maintenance) allotments, 28 "I" category

(Intensive) allotments, and 51 "C" (Custodial) allotments. These numbers may change due to combining or splitting allotments or other administrative actions. Almost all of the allotments are grazed year-round, with cattle on the allotment for the entire year. Most employ some type of rotational grazing. On a few allotments, cattle are moved rather frequently from one pasture to the next; however, the most common practice is to move cattle less regularly from pasture to pasture. Both methods allow for seasonal deferment, with the first method providing shorter but more frequent periods and the second providing longer but less frequent deferment times. Most permittees run a cow/calf operation, with calving generally during February and shipping from October to November. At times heifers are held over as replacement stock. Some permittees run a yearling operation with a period of use generally from May 1 to November 1. Yearlings are purchased either locally or out-of-state.

Grazing administration was discussed in the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management Draft Resource Management Plan Amendment/Environmental Impact Statement (Feb. 1999). Pages 4-1 through 4-6 discuss methodology for determining impacts and pages 4-19 through 4-20 describe impacts to the grazing program. Livestock use levels within the Planning Area are expected to reflect those in the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management Draft Resource Management Plan Amendment/ Environmental Impact Statement (Feb. 1999). Approximately 20 percent of the allotments were estimated to not meet the standards and in order to meet the standards a 20 percent reduction in AUMs on these allotments could be necessary. Based on these numbers, within the Planning Area, an initial reduction of 7,660 AUMs could occur.

Within the Planning Area, both Field Offices have over 20 years of vegetation monitoring data gathered at permanently established study plots. Overall, this data indicates that range condition, plant composition, and vegetative cover values have shown little change over this time period. Generally, range condition ratings have been in the mid-fair to mid-good classes and composition and cover values are in line with those described in the NRCS Range Site Descriptions. While the Roswell Field Office has just begun the Rangeland Health Standards assessment process within the Planning Area, the Carlsbad Field Office has completed assessments on about 15 percent of the allotments, mainly in conjunction with the grazing permit renewal process. These assessments indicate that the vast majority of the sites are meeting the Rangeland Health Standards. Information specific to individual allotments can be found in monitoring files in both field offices or at the Vegetation Monitoring and Analysis Program web site (http://nmso3web2/vmap/vmap_home.htm).

As part of the grazing permit renewal process, adjustments were made to grazing permits/leases on eight allotments within the Planning Area. The adjustments were based on rangeland monitoring study plot data and Robel pole inventory data. Range Use Adjustment Agreements were used to place a total of 836 Animal Units (AUs or one cow yearlong) in voluntary non-use. After meeting to discuss the results of the monitoring data, the affected grazing permittees agreed to place these AUs in voluntary non-use. The adjustments occurred on some of the larger allotments, where the percentage of public land was high (75-90 percent). Seven of these eight allotments are in the Core Management Area (CMA) within the Roswell Field Office and represent the majority of the adjustments that would need to be made within the CMA. On several smaller allotments, with limited public land, cross fences were completed to create "public land" pastures. These pastures have been

deferred from livestock use during lesser prairie-chicken booming, nesting, and rearing seasons.

As part of the Range Use Adjustment Agreements, terms and conditions specific to lesser prairie-chicken management were added to the grazing permit or lease. These terms and conditions apply to specific pastures designated as lesser prairie-chicken pastures. They include:

1. Robel's vegetative monitoring methodology which has been approved by the Five State Lesser Prairie-chicken Interstate Working Group will be implemented to measure lesser prairie-chicken habitat requirements. Specific parameters include:

Shrub coverage – 25 to 30 percent composition of entire vegetative community

Forb coverage – 10 to 15 percent composition of entire vegetative community

Grass coverage – 60 percent composition of entire vegetative community; 10 percent with a visual obstruction reading (VOR) greater than or equal to 3.0 decimeters (12 inches) and an average VOR of 1.0 decimeter (4 inches).

Note: It is important to understand that these parameters in certain pastures may not be met until the habitat has time to respond to the new grazing management practices. As long as improvement is being made in those pastures, then permanent changes should not be necessary. If lesser prairie-chicken habitat requirements are not being improved as a result of livestock grazing practices, permanent changes may be necessary.

2. Vegetative monitoring utilizing the Robel Pole would be conducted on an annual basis within those lesser prairie-chicken pastures that are in question of meeting habitat parameters. An adaptive

grazing management approach would be taken to where annual changes in livestock numbers or use within pastures would fluctuate depending upon the range evaluation.

3. Additional livestock grazing management changes may be required as a result of periods of abnormal climatic patterns and the vegetative condition resulting from these climatic changes in cooperation.

Fire Management

The "Resource Management Plan Amendment for Fire and Fuels Management on Public Land in New Mexico and Texas" (September 2004) delineates three Fire Regime Condition Classes on public land in New Mexico. Fire Regime Condition Class is "a function of the degree of departure from historical fire regimes resulting in alterations of key ecosystem components such as species composition, structural stage, stand age, and canopy closure." The majority of the Planning Area is in Fire Regime Condition Class (FRCC) 2 with the remainder in FRCC 1.

Condition Class 1 is described as being within the natural (historical) range of variability of vegetation characteristics; fuel composition; fire frequency, severity, and pattern; and other associated disturbances. Condition Class 2 is described as having moderate departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity, and pattern; and other associated disturbances.

Hazardous Materials

Precautionary measures are used to prevent releases or spills into the environment on all BLM-authorized activities that involve hazardous materials or their use. The transportation, storage, and handling of hazardous materials are carried out in accordance with manufacturers'

specifications, applicable laws and regulations.

BLM-administered public land contaminated with hazardous materials are reported, secured, cleaned up or otherwise remedied according to applicable Federal and State regulations and contingency plans. Parties responsible for contamination are liable for cleanup and resource damage costs, as prescribed in Federal and State regulations. If at all possible, the responsible parties bear the financial burden of cleanup and resource damage costs.

If hazards are identified on public land, the BLM provides appropriate warnings and establish precautions for safety hazards associated with the use of this land.

Cultural Resources

The cultural resources program encompasses both proactive and regulatory activities. Proactive elements include public education such as presentations and moveable archeological displays as well as site stabilization and protection. No Traditional Cultural Properties or Sacred Sites have been identified by Native American tribes in the Planning Area.

The primary focus of the cultural resource program for both the Carlsbad and Roswell Field Offices is to protect archeological and historic sites from damage during the construction of projects that fall under BLM jurisdiction. Federal law prohibits impacting eligible and potentially eligible archeological and historic sites as a result of permitting Federal undertakings without prior data recovery. Identification and avoidance of eligible and potentially eligible cultural resources are accomplished through contracted cultural inventory surveys. Generally, sites must be avoided by 100 feet. In some cases, BLM has approved projects where 100 foot avoidance is reduced, but where fencing or construction monitoring is required. There are cases

where cultural surveys are not required. The criteria to be met are listed below.

- Previous ground disturbance has modified the surface greatly.
- Human activity within the last 50 years has created a new land surface.
- Existing Class 2 (sample survey) or equivalent inventory data are sufficient to indicate that the environmental situation did not support human occupation.
- Availability of Class 3 (intensive survey) information of the area has been fully documented.
- Presence of a geomorphic situation that does not enhance preservation.
- A large number of negative surveys in close proximity to each other.
- Absence of criteria listed in "criteria for survey".

National Register eligibility is based upon the following criteria:

1. site(s) that are associated with events that have made a significant contribution
2. to the broad patterns of our history; or
3. that are associated with the lives of persons significant in our past; or
4. that embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
5. that has yielded, or may be likely to yield, information important in prehistory or history.

Generally, archeological and historic sites, if eligible, are found to be eligible under criterion (d). Many sites are considered undetermined as to eligibility and so must

be protected or archeologically treated prior to surface disturbance.

The Planning Area encompasses approximately 847,491 acres of public land plus an additional 298,000 acres of Federal minerals. Within the Roswell Field Office jurisdiction, there are close to 400 archeological and historic sites recorded on public land including Federal mineral estate. Historic sites number around 20. Roswell Field Office records also show approximately 60 archeological and historic sites recorded on private and State trust lands within the Planning Area. The Carlsbad Field Office records show 2,334 archeological and historic sites recorded on BLM public land within the Carlsbad Field Office jurisdiction, including Federal mineral estate. Historic sites number 27 with 1,449 sites identified as prehistoric, 104 sites as multi-component, and 754 sites with an unknown cultural time period within the prehistoric era.

There are a variety of site types within the Planning Area. The majority of the historic sites recorded are single event trash dumps. A few homesteads have been recorded. Prehistoric sites represent the vast majority of the cultural resources recorded. Cultural resources date from the earliest Paleoindian through Ceramic or Formative periods. The majority of these sites are comprised primarily of stone artifacts. It is common to find burnt caliche cobbles, pottery sherds and sandstone food grinding implements in association with the stone artifacts. There are areas where pit house structures are likely. See the Carlsbad Field Office Special Management Areas (SMAs) in the 1988 Carlsbad RMP.

Paleontological Resources

The paleontological resources (fossils) program encompasses both proactive and regulatory activities. Proactive elements include public education such as presentations and moveable paleontological displays as well as site stabilization and

protection. The primary focus of the paleontological resource program for both the Carlsbad and Roswell Field Offices is to protect paleontological resources sites from damage during the construction of projects that fall under BLM jurisdiction. The goal is to locate, evaluate, and classify the paleontological resources on public land to ensure that they are given full consideration in all aspects of public land management. Fossils are non-renewable and (except for microfossils and those that make up the energy minerals) relatively rare resources with significant scientific, educational, commercial and recreational values. Fossils on Federal land are managed for their scientific, educational and where appropriate, recreational values.

Two Federal laws currently target the illegal collection or destruction of fossils. The Archaeological Resources Protection Act of 1979, 16 U.S.C. 470aa-470mm (ARPA), authorizes penalties for illegal collections of paleontological resources. However, ARPA applies only to paleontological resources that were found in an archaeological context. The Federal Cave Resources Protection Act of 1988, 16 U.S.C. 4301-4309 (FCRPA), authorizes misdemeanor-level penalties for illegal collections of paleontological resources from significant caves. Because these authorities address a limited subset of fossils, laws penalizing the theft or depredation of government property (18 U.S.C. 641 and 1361) now offer the primary protection for fossils on Federal land. Identification and avoidance of significant paleontological resources are accomplished through contracted cultural inventory surveys. Generally, paleontological sites must be avoided by 100 feet. In some cases, BLM has approved projects where 100 foot avoidance is reduced, but where fencing and/or construction monitoring is required.

Public land is classified at the field level according to their potential for noteworthy occurrences of fossils. Classification uses any available sources of information,

including data banks, maps, knowledge of local residents, and data from paleontologists. Classification ranks the public land as follows:

- **Condition 1:** Areas that are known to contain fossil localities. Consideration of paleontological resources is necessary if available information indicates that fossils are present in the area.
- **Condition 2:** Areas with exposures of geological units or settings that are likely to produce fossils. The presence of geological units from which fossils have been recovered elsewhere requires an assessment of these same units if they occur in the area of consideration.
- **Condition 3:** Areas that are extremely unlikely to produce fossils, based on their surface geology.

Paleontological resources are addressed in environmental analysis processes to ensure adequate protection.

In areas classified as Condition 1 or Condition 2, where potential impacts exist from proposed surface disturbing activities, the following procedures are employed:

- A qualified paleontologist conducts a literature review and records survey to identify areas where fossils are known to occur in the general area of the proposed action.
- A qualified paleontologist conducts a field survey whenever a literature review and records survey indicate that vertebrate or other noteworthy occurrences of fossils are or may be present.
- A report of findings is prepared following the completion of the field survey, literature review and records survey.

In areas determined to have noteworthy occurrences of fossils, mitigation of surface disturbing activities are considered. A mitigation and monitoring plan based on a

report of finding is prepared recommending the types of mitigation and intensity of monitoring needed. Mitigation may include:

- Avoiding fossils by redesigning or relocating a proposed project
- Complete or partial salvage of the fossil(s) under a permit
- Obtaining representative samples of the fossils from the project area under a permit

Management of paleontological resources includes making them available for uses such as scientific collection and research, educational and interpretive activities, and recreation.

The Planning Area encompasses approximately 847,491 acres of public land plus an additional 298,000 acres of Federal minerals. Within the Roswell Field Office and Carlsbad Field Office jurisdiction, there have been several paleontological sites recorded on BLM managed land including Federal mineral estate. The paleontological sites recorded in the Roswell Field Office and the Carlsbad Field Office jurisdiction have consisted of vertebrate fossils of the late Pleistocene and early Holocene. The vertebrate fossils from the various fossil sites were identified as Columbian Mammoth, Camel, and several extinct species of deer. These vertebrate fossil sites are of great significance because of their relative rarity and scientific importance.

Recreation

A recreation opportunity spectrum (ROS) was completed for the Planning Area as part of the 1997 Roswell RMP. Under this evaluation, the bulk of the Planning Area was determined to be "rural" with pockets of "roaded natural" areas (see Glossary). These designations are still valid.

Elements of public land users enjoy watching wildlife. Birdwatchers and photographers visit lek areas during booming season for the purpose of

obtaining photographs and observing the Lesser Prairie-chickens engage in mating rituals.

Currently, there are three special recreation management areas (SRMA) within the Planning Area. These SRMAs are the Mescalero Sands North Dune Off-Highway Vehicle (OHV) Area, the Mescalero Sands Area of Critical Environmental Concern (ACEC), and the Hackberry Lake Intensive Off-Road Vehicle (ORV) Area. See Map NAA-1 for the locations of the SRMAs.

The Mescalero Sands North Dune OHV Area is currently covers 562 acres and the 1997 Roswell RMPA calls for expanding the area to approximately 1,674 acres. The objective of the OHV area is to provide outdoor recreation opportunities for public land users who recreate with OHVs, such as quad runners, dune buggies, and motorcycles. The OHV area is the only area designated "open" to OHV uses within the Roswell Field Office.

The Hackberry Lake Intensive ORV Area covers 55,800 acres with the objective of providing outdoor recreation opportunities for OHV ricers. Hackberry Lake ORV Area is used annually by the Desert Rough Riders hosting the Carlsbad 100 Desert Race. Approximately 22,673 acres of the Hackberry Lake ORV Area is located within the Planning Area.

Within the Planning Area, there is an undesignated, unnamed dune complex located approximately 2-3 miles east of the dune complex at Hackberry Lake ORV Area. This dune complex is also heavily used throughout the year by OHV enthusiasts.

Effective August 5, 2004, the Planning Area is under Interim Management pending the RMPA/EIS. Under Interim Management, all land in the Planning Area within the Carlsbad Field Office that is currently designated as open to OHV use is temporarily designated as limited to existing

roads, trails, or ways. An exception in Carlsbad Field Office is the Hackberry Lake Intensive ORV area which continues to be designated as open to OHV use.

- Bear Grass Draw - All Special Management Area (SMA) acreage within the Planning Area is designated "Limited to designated routes"
- Laguna Plata - 120 acres designated "Closed" to OHV use; 2,240 acres designated "Limited to designated routes"
- Maroon Cliffs - All SMA acreage within Planning Area designated "Limited to designated routes"
- Poco Site - 51 acres designated "Limited to designated routes"

Visual Resources

Visual Resource Management Classes have been previously identified and delineated for the Roswell Field Office in the 1997 Roswell RMP and for the Carlsbad Field Office in the 1988 Carlsbad RMP. See the Glossary for a definition of the Visual Resource Management Classes.

Special Management Areas (SMAs)

Roswell Field Office

The 1997 Roswell RMP documents three SMAs within the Planning Area: the Mathers Research Natural Area (RNA), the Mescalero Sands North Dune OHV Area, and the Mescalero Sands ACEC. The Roswell RMP designates the OHV area and the ACEC as SRMAs. All three areas are entirely within the Planning Area.

- Mathers Instant Study Area (ISA)

The Mathers RNA contains 242 acres and is the same as the Mathers Instant Study Area (ISA). The ISA is the result of New Mexico

BLM's 1991 Wilderness Study Report. BLM determined the ISA was of insufficient size for wilderness preservation, bisected by a major improved road, and lacks outstanding opportunities for solitude and primitive recreation. The report mistakenly listed the ISAs size as 362 acres based on an original designation of the area as a Natural Area. Research into the original documents revealed the original Mathers Natural Area designation as 242 acres. Henceforth, the Mathers RNA and ISA are listed as 242 acres.

As designated in the 1997 Roswell RMP the Mathers RNA is closed to new oil and gas leasing, withdrawn from mineral entry, closed to solid mineral leasing, closed to the disposal of mineral materials, designated as a ROW exclusion area, and closed to OHV use.

Mescalero Sands North Dune OHV Area

The Mescalero Sands North Dune OHV is the only area designated as open to OHV use in the Roswell Field Office. The OHV area is described in the Recreation section of this chapter.

Mescalero Sands ACEC

The Mescalero Sands ACEC is separate from the OHV area with a similar name and contains approximately 7,888 acres of public land. The ACEC management goal is to protect the biological, archeological and scenic qualities of the ACEC, with emphasis on the preservation of a portion of the shinnery oak-dune community to enhance the biodiversity of the ecosystem. As designated in the 1997 Roswell RMP, the Mescalero Sands ACEC is closed to new oil and gas leasing, withdrawn from mineral entry, closed to solid mineral leasing, closed to the disposal of mineral materials, and designated as a ROW exclusion area. Approximately 2,478 acres of the ACEC are closed to OHV use and the

remainder is designated as limited to designated roads and trails.

Carlsbad Field Office

The 1988 Carlsbad RMP established 23 SMAs, four of which are entire or partially within the Planning Area.

Bear Grass Draw

Bear Grass Draw consists of 1,780 acres, of which 1,280 acres are within the Planning Area. This area contains a high density of prehistoric sites within a developed oil and gas field. Sites encompass the Archaic time period (5,000 B.C.) through the Formative (1,450 A.D.). Many of these sites have subsurface potential to yield in situ cultural materials, including pit house structures. The management objective for this Cultural Resource Management Area is to protect and preserve the important and sensitive cultural resource values for research. The 1998 Carlsbad RMP designates this SMA as limited to OHV use.

Laguna Plata

The Laguna Plata Archeological District contains 3,360 acres of public land and is located entirely within the Planning Area. This is another area of high density prehistoric sites covering a long expanse of time (Archaic – Formative). There is cultural depth to many of the sites and the likelihood of finding pit houses. The management goal is to protect and preserve the important and sensitive cultural resource values for research.

As designated in the 1988 Carlsbad RMP, the Laguna Plata Archeological District has a no surface occupancy (NSO) stipulation applied to oil and gas leases, is a ROW avoidance area, closed to solid mineral leasing (except potash), closed to mineral material disposal, and designated 1,120 acres closed to OHV use and 2,240 acres as limited to OHV use.

Maroon Cliffs

The Maroon Cliffs Archeological District originally contained 11,783 acres of public land. The 1997 Carlsbad RMP Amendment increased the size of the district to 17,720 acres of which approximately 4,760 acres are within the Planning Area. Archeological sites date to the Archaic and Formative periods with pit structures likely. The high site density and in situ subsurface cultural deposits are important factors in this archeological district. The management goal is to protect and preserve the important and sensitive cultural resource values for research.

As designated in 1998 Carlsbad RMP and 1997 Carlsbad RMPA the Maroon Cliffs Archeological District has a NSO stipulation applied to oil and gas leases covering 6,840 acres, no new oil and gas leasing on 10,880 acres, is a ROW avoidance area, closed to mineral material disposal, and designated as limited to OHV use.

Poco Site

The Poco Site contains 51 acres and is entirely within the Planning Area. This site dates from approximately 600 A.D. to approximately 1375 A.D. based on ceramic types. There is the potential for finding pit structures. Subsurface in situ cultural deposits are present. The management goal is to protect and preserve the important and sensitive cultural resource values for research. The area is designated as limited to OHV use.

Hackberry Lake ORV Area

The Hackberry Lake ORV Area contains 55,800 acres of public land of which approximately 21,440 acres are within the Planning Area. The management objective is to manage the area as an intensive ORV use area and avoid conflicts with other land uses.

There are no designated Wild and Scenic Rivers or Wilderness Areas present in the Planning Area, nor are there any other kinds of Congressional designated units, such as National Conservation Areas or National Historic or Scenic Trails. There are no cave/karst issues within the Planning Area.

Environmental Justice

While New Mexico is one of four states in the Nation in which minorities are the majority of the State's population, the Planning Area does not encompass communities of minorities or communities made up of low-income residents. The current management prescriptions and policies do not place a disproportionate share of negative environmental consequences on such populations and communities adjacent to the Planning Area. See the Glossary for a definition of environmental justice.

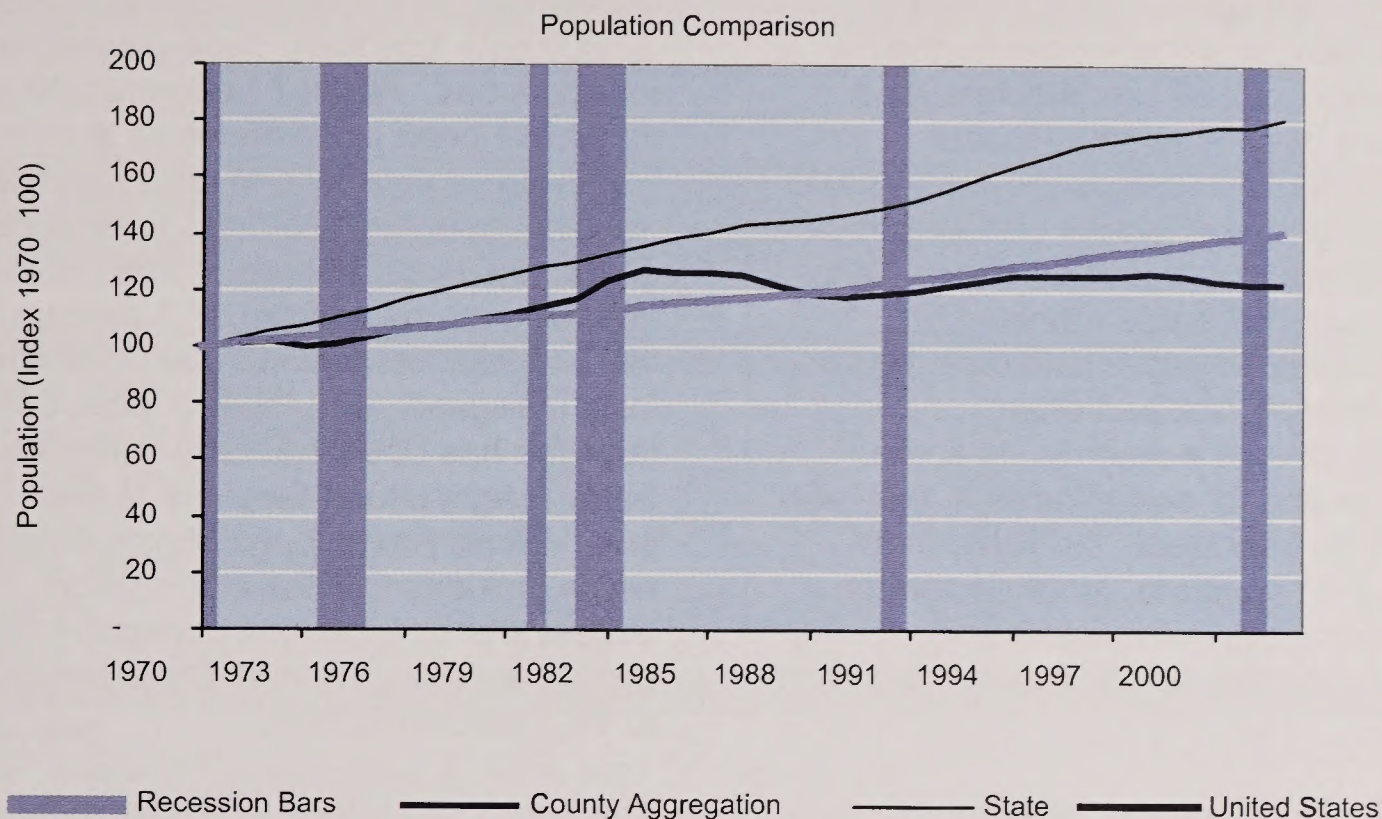
Social and Economic Values

Demographics

The Planning Area covers parts of four counties in southeast New Mexico, Roosevelt, Chaves, Eddy and Lea. While the Planning Area itself is rural in nature, it is surrounded by these communities: Portales and Elida in Roosevelt County; Roswell, Dexter, Hagerman and Lake Arthur in Chaves County; Artesia, Carlsbad and Loving in Eddy County; and Jal, Eunice, Hobbs, Lovington and Tatum in Lea County.

Over the past 30 years, the populations of all four counties have grown. See Table 3-5 and Figure 3-1. This growth, however, in Eddy, Lea and Roosevelt was less than the population growth of State of New Mexico and the Nation as a whole. Only Chaves County posted population growth greater than the State of New Mexico, but less than population growth in the nation as shown in Tables 3-6.

FIGURE 3-1 POPULATION COMPARISON



SOURCE: Bureau of Economic Analysis, REIS, Table CA30

TABLE 3-5
COUNTY POPULATION CHANGES

COUNTY	POPULATION		
	1970	2002	Growth Rate, 1970-2002
Chaves	44,929	61,148	40%
Eddy	41,013	51,264	11%
Lea	49,647	55,613	25%
Roosevelt	16,531	18,024	9%
TOTAL	152,120	186,049	23%

SOURCE: Bureau of Economic Analysis, REIS, Table CA30

TABLE 3-6
CURRENT POPULATION

Community	Population	Community	Population
Artesia	10,692	Jal	1,996
Carlsbad	25,625	Tatum	683
Eunice	2,562	Elida	183
Hobbs	28,657	Dexter	1,235
Lovington	9,471	Hagerman	1,168
Portales	11,131	Lake Arthur	432
Roswell	45,293	Loving	1,326

SOURCE: Census 2000, SF1 Table P12

Most residents of these counties live in the larger towns of Roswell, Artesia, Carlsbad,

Hobbs and Lovington. For example, the 2000 Census indicated the population of Roswell at about 46,000. That leaves about 15,000 people living in the other communities and unincorporated areas of Chaves County surrounding those communities. See Table 3-6.

Within these counties, roughly 70 percent of population classifies itself as white (which includes some Hispanic or Latino) while approximately 40 percent identify themselves as Hispanic or Latino of any race. This compares with 67 percent white and 42 percent Hispanic or Latino of any race within the State of New Mexico.

The population of the area has gotten older during the past 10 years. In 1990 the median age was 31.4 year which increased to 34.4 years in 2000. The largest age category is the 15 to 19 years old with nine percent of the population. The fastest growing age group is the 45 to 49 years old category which makes up two percent of the population.

Economics

Historically, cattle ranching and petroleum development have played a significant role in economic development. In a very real sense, the identity of the residents, their sense of place, culture, architecture, and fashion have been shaped by these industries. These industries, however, have not been a significant source of new jobs or personal income in the last 30 years. This does not mean that cattle ranching or petroleum development should disappear. They are an important part of an increasingly diverse economy. In some communities and for some families, they will continue to be important. As Table 3-10 and Table 3-11 illustrate, other sectors of the economy are growing faster and comprise a relatively larger share of the economy.

Virtually all official sources of economic data use the Standard Industrial Classification (SIC) System. For simplicity in presentation, this document combines some of the SIC categories. The categories used are Farm & Agricultural Services; Mining (which includes oil and gas employment); Manufacturing; Construction; Government (all levels) and Services & Professional.

The Services & Professional category includes transportation and public utilities; wholesale trade; retail trade; finance, insurance and real estate; and health, legal, business and other services.

While agriculture and petroleum development are viewed as the main source of employment in southeast New Mexico, a review of Bureau of Labor Statistics, Bureau of Economic Analysis, Bureau of Census and other Department of Commerce information indicates this is not entirely correct. The largest employment category in the four counties is Services & Professional and has been for the past 30 years. See Table 3-7. The next largest category of employment is Government. Interestingly, within this category, the

largest growth has been in State and Local government employment. Federal employment has remained level.

During the past 30 years, approximately 30,000 new jobs have been created in the four counties. About 71 percent of these jobs have been in the Services & Professional category, making it the fastest growing category. Services & Professional gained the largest share of total employment, rising from 17.3 percent in 1970 to 24.8 percent in 2000. The largest loss, in regards to number of jobs, during this time has been the Farm component of Farm & Agricultural Services at over 1,000 jobs. Employment in the Mining category, which includes Oil/Gas employment, lost the largest share of the total during this 30-year period, shrinking from 15.5 percent in 1970 to 10.7 percent in 2000.

The aggregate trends in employment in the four counties are displayed in Figure 3-2. During the past 30 years employment in Agriculture, Construction and Manufacturing has remained steady. Mining, which includes petroleum development, shows a peak in the 1980s but declined slightly in 1990s.

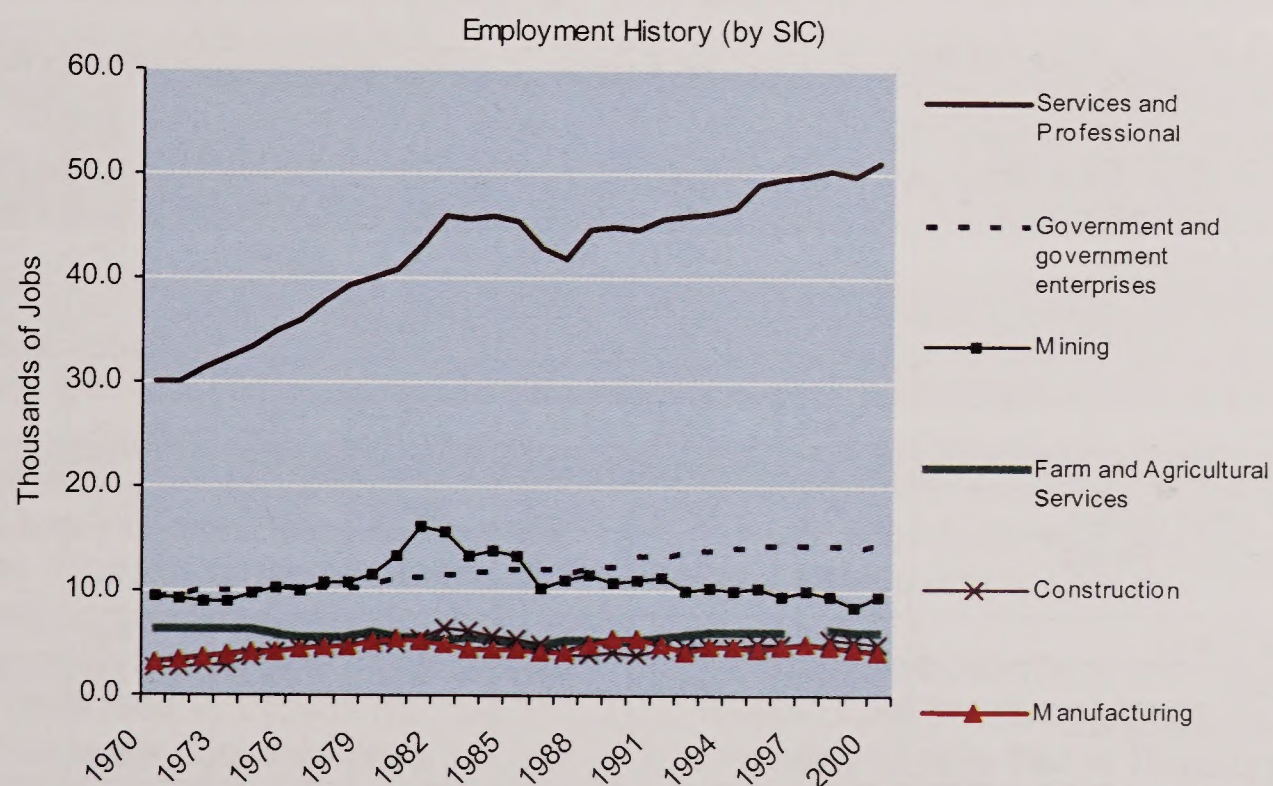
The employment described above generates personal income. Two ways to measure the quality of the jobs are per capita income and average earnings per job. See Table 3-8. Per capita income is calculated by dividing the total income by the total population. Average earnings per job are calculated by dividing total income by the number of workers (including part-time employees). The per capita income in all four counties ranks below the State of New Mexico and the Nation. For average earnings per job, all four counties are at or just below the average for the State of New Mexico, but well below the average for the Nation.

Sources of personal income use the same categories found in Standard Industrial Classification (SIC) System with the addition

TABLE 3-7 COUNTY EMPLOYMENT BY INDUSTRY								
INDUSTRY	CHAVES COUNTY		EDDY COUNTY		LEA COUNTY		ROOSEVELT COUNTY	
	1970	2000	1970	2000	1970	2000	1970	2000
Total Employment	17,142	28,017	16,188	25,530	21,061	28,469	6,243	7,800
Wage & Salary Employment	13,623	21,754	13,318	20,350	17,623	23,071	3,762	5,641
Proprietors' Employment	3,619	6,263	2,870	5,180	3,438	5,398	2,481	2,159
Farm & Ag Services	1,975	2,204	1,233	1,171	1,217	1,091	1,851	1,448
Farm	1,745	1,561	1,092	817	1,088	855	1,745	1,263
Ag Services	230	643	141	354	149	236	106	185
Mining	639	1,094	3,595	3,029	5,071	5,410	69	49
Manufacturing	1,468	2,342	679	997	723	490	282	262
Services & Professional	9,289	16,104	7,838	15,236	10,577	16,162	2,419	3,558
Transportation & Public Utilities	1,069	926	845	2,017	2,131	1,423	244	467
Wholesale Trade	604	995	454	586	1,014	1,281	191	212
Retail Trade	3,015	5,608	2,536	4,593	3,362	4,642	887	1,374
Finance, Insurance & Real Estate	1,368	1,642	710	1,252	837	1,408	367	352
Health, Legal, Business & Other	3,233	8,933	3,293	6,788	3,233	7,408	730	1,153
Construction	768	1,351	559	1,451	1,039	1,578	147	422
Government	3,003	4,922	2,284	3,646	2,434	3,738	1,475	2,061

SOURCE: Bureau of Economic Analysis, REIS, 2002 CD Table CA 25

FIGURE 3-2 EMPLOYMENT BY STANDARD INDUSTRIAL CATEGORY



Source: Bureau of Economic Analysis, REIS, 2002 CD Table CA 25

of the Non-Labor Income category. See Table 3-9. Non-Labor Income is defined as income derived from dividends, interest, rent, and transfer payments. Transfer payments include retirement, disability, Medicare, welfare and other payments.

The largest source of personal income in the four counties is Non-Labor Income at 37 percent of the total personal income.

Services & Professional is the second largest source of personal income.

Non-Labor is also ranked as the fastest growing source of personal income, its share increasing from 22.9 percent in 1970 to 37 percent in 2000.

The aggregate trend of personal income sources in the four counties is depicted on Figure 3-3, which has been adjusted for inflation.

TABLE 3-8 CHANGES IN INCOME BY COUNTY

COUNTY Adjusted for inflation	PER CAPITA INCOME		AVERAGE EARNINGS PER JOB	
	1970	2002	1970	2002
Chaves	14,281	22,727	27,203	32,370
Eddy	15,111	23,763	31,251	34,095
Lea	15,792	22,503	31,691	33,096
Roosevelt	13,228	23,792	25,956	29,835
New Mexico		24,823		33,461
United States		30,906		40,758

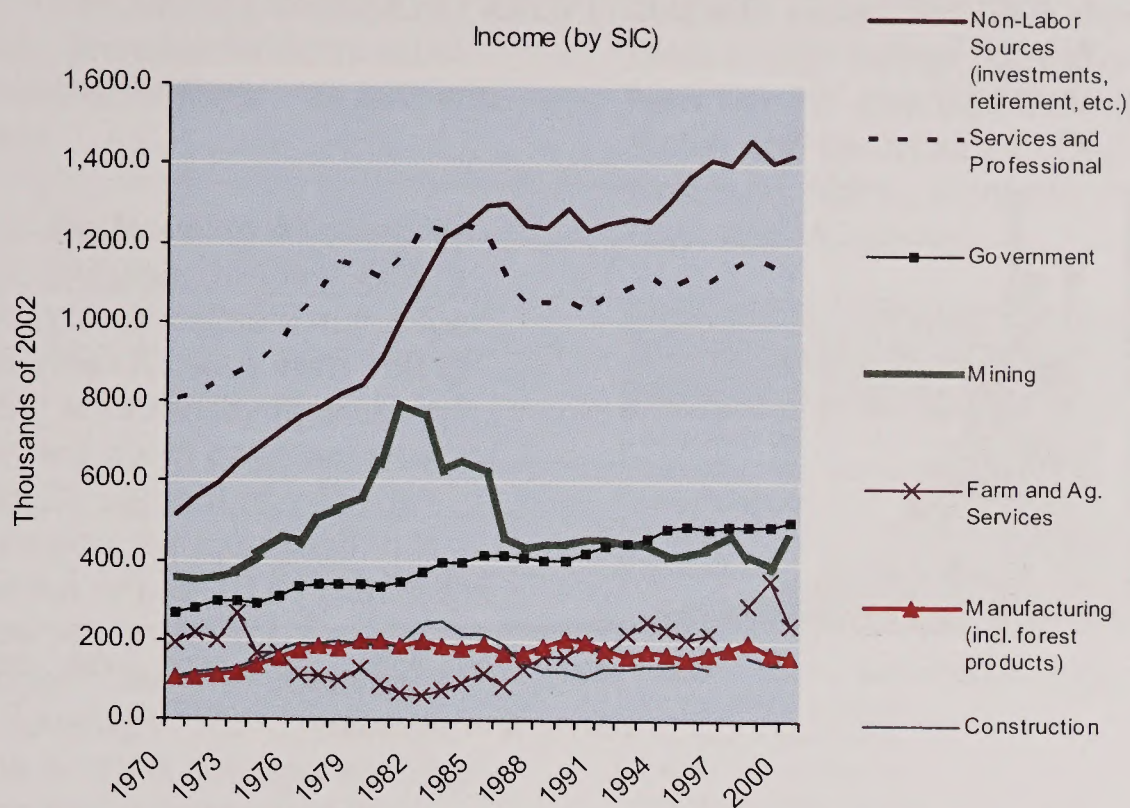
SOURCE: Bureau of Economic Analysis, REIS, Table CA30

TABLE 3-9 SOURCES OF PERSONAL INCOME BY COUNTY

INCOME SOURCE (MILLIONS OF DOLLARS) All figures in millions of 2000 dollars	CHAVES COUNTY		EDDY COUNTY		LEA COUNTY		ROOSEVELT COUNTY	
	1970	2000	1970	2000	1970	2000	1970	2000
Total Personal Income	625.0	1,218.0	820.0	1,107.0	784.0	1,153.0	219.0	359.0
Farm & Ag Services	56.0	121.0	42.0	25.0	36.0	34.0	62.0	62.0
Farm	48.0	104.0	39.0	21.0	33.0	29.0	60.0	60.0
Ag Services	7.2	16.5	2.5	4.0	3.1	5.0	1.4	2.3
Mining	19.0	54.8	147.1	173.0	185.3	229.2	1.1	1.8
Manufacturing	41.0	88.0	25.0	49.0	31.0	16.0	6.0	8.0
Services & Professional	235.0	330.0	203.0	364.0	323.0	406.0	47.0	70.0
Transportation & Public Utilities	40.0	34.0	31.0	104.0	93.0	81.0	10.0	20.0
Wholesale Trade	26.0	28.0	13.0	21.0	44.0	48.0	3.0	5.0
Retail Trade	70.0	91.0	58.0	72.0	82.0	77.0	18.0	20.0
Finance, Insurance & Real Estate	26.0	29.0	16.0	24.0	19.0	29.0	5.0	4.0
Health, Legal, Business & Other	72.0	148.0	85.0	143.0	86.0	171.0	11.0	21.0
Construction	27.0	39.0	24.0	47.0	51.0	46.0	5.0	9.0
Government	88.0	174.0	65.0	144.0	71.0	123.0	40.0	61.0
Non-Labor Income	191.0	482.0	144.0	409.0	126.0	396.0	54.0	137.0
Dividends, Interest & Rent	119.0	224.0	79.0	180.0	74.0	169.0	29.0	58.0
Transfer Payments	72.0	259.0	65.0	229.0	53.0	227.0	25.0	79.0

SOURCE: Bureau of Economic Analysis, REIS, 2002 CD Table CA 05

FIGURE 3-3 SOURCES OF PERSONAL INCOME BY STANDARD INDUSTRIAL CATEGORY



Source: Bureau of Economic Analysis, REIS, 2002 CD Table CA 05

A diversified economy is healthier than an economy based on a single industry. Diversified economies are better able to withstand market fluctuations than economies based on a single industry. In a diversified economy, downturns in a particular industry or category tend to be masked by the other industries or categories. Below are two ways to depict the economic diversity and display the aggregate of the four counties.

Figure 3-4 depicts the Index of Specialization for the four-county area. The degree of specialization index depicts how dependant a county or area is on a particular industry or employer. As counties approach the right side of the graph, the more specialized their employment. As counties approach the left side of the graph, the more diverse their employment. The solid black line in the above graph is the aggregate of Chaves, Eddy, Lea and Roosevelt Counties. Median refers to that mythical county that has the median degree of employment specialization of all counties in the United States. What the graph depicts is the economy of the four counties

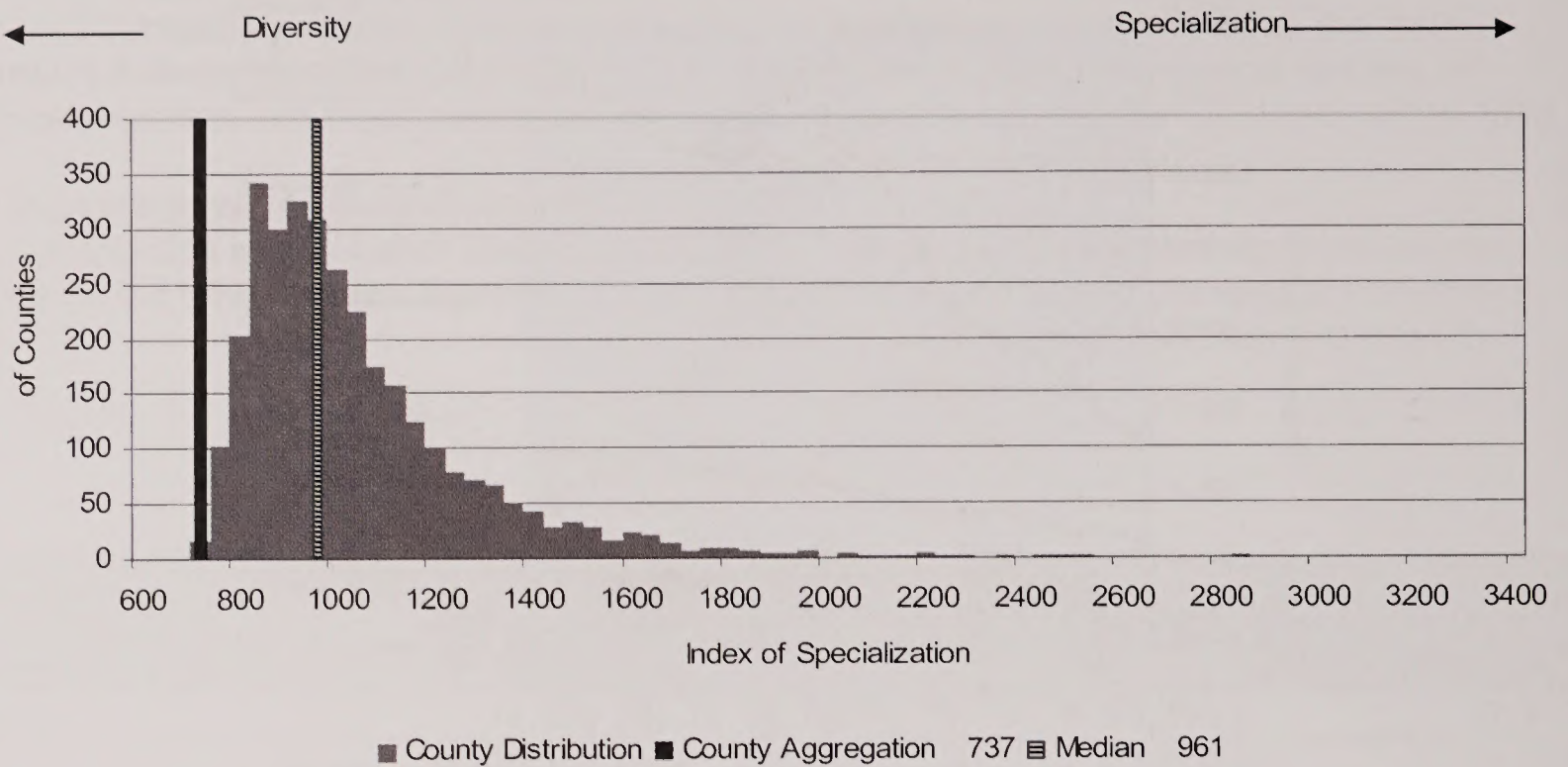
is more diverse than the median (an index of 737 versus 961).

Another way is to look at the employment share by industry in the four counties as compared to the United States as a whole. Figure 3-5 depicts the data on which the Index of Specialization is based. The data indicates that no one category dominates the economy of the four counties.

The unemployment rate in the four counties has generally run higher than the unemployment rate for New Mexico and the nation. See Figure 3-6. In 2003, the unemployment rate in the four counties was 6.4 percent compared to 6.4 percent for New Mexico and 6.0 percent for the nation.

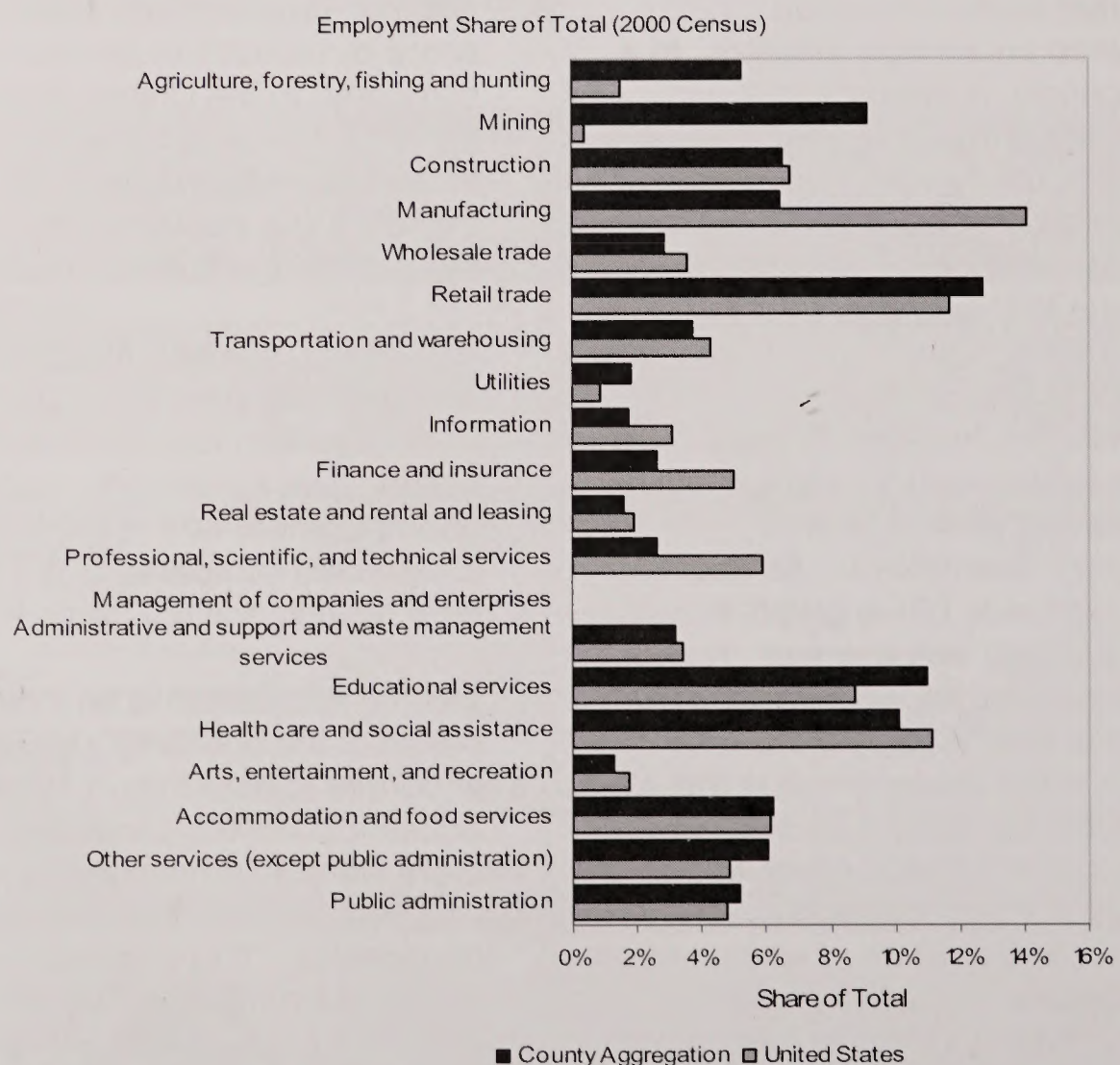
Income distribution is an indicator of the health of the economy. In Figure 3-7 is it important to note that in 1989 for every household making more than 100,000, there were 30.8 households making under 30,000. In 1999, this improved to 10.6 households. This information has not been adjusted for inflation. Inflation has had some influence on this improvement but is not the sole cause of this improvement.

FIGURE 3-4 ECONOMIC INDEX OF SPECIALIZATION



Source: Census 2000, SFS Table P49

FIGURE 3-5
EMPLOYMENT SHARE BY NORTH AMERICAN INDUSTRIAL CLASSIFICATION SYSTEM



Source: Census 2000, SFS Table P49

Another important trend over the last 10 years is a dramatic increase in the number of households making between 45,000 and 100,000 per year.

Table 3-10 shows the Housing Affordability Index for the four counties. In the 1990s housing became more affordable in the four counties with the index moving from 180 to 209. [The housing affordability figures assume a 20 percent down payment and that no more than 25 percent of a family's income goes to paying the mortgage. It is based on an interest rate of 10.01 percent in 1990 and 8.03 percent in 2000.]

While the economy of the four counties is diverse and the housing is affordable, the per capita income and the average earnings per job lag behind New Mexico and the nation. One reason may be the education level of workers in the four counties. See Table 3-11. The education levels in the four

counties lag behind New Mexico and New Mexico lags behind the national levels. New Mexico also lags behind the Western states and the Mountain Division (Arizona, Colorado, Idaho, Montana, New Mexico, Utah and Wyoming).

TABLE 3-10 HOUSING AFFORDABILITY INDEX		
OWNER OCCUPIED	1990	2000
Specified owner-occupied housing units: Median value (Adjusted for Inflation in 2000 \$'s)	56,258	58,600
% of median income necessary to buy the median house	14%	12%
Income required to qualify for the median house	18,974	16,559
Housing Affordability Index: (100 or above means that the median family can afford the median house.)*	180	209
Source: Census 1990 and 2000		

FIGURE 3-6 UNEMPLOYMENT RATES

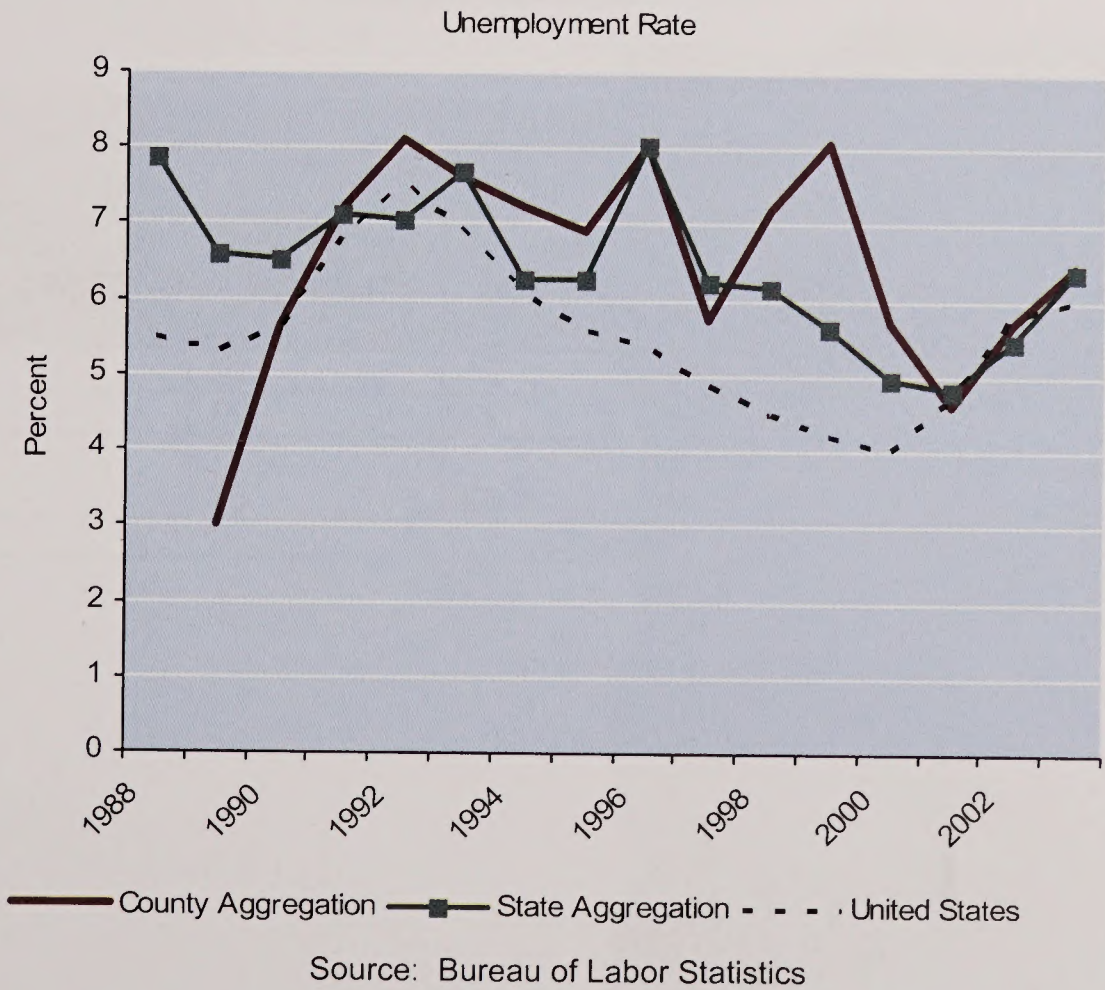
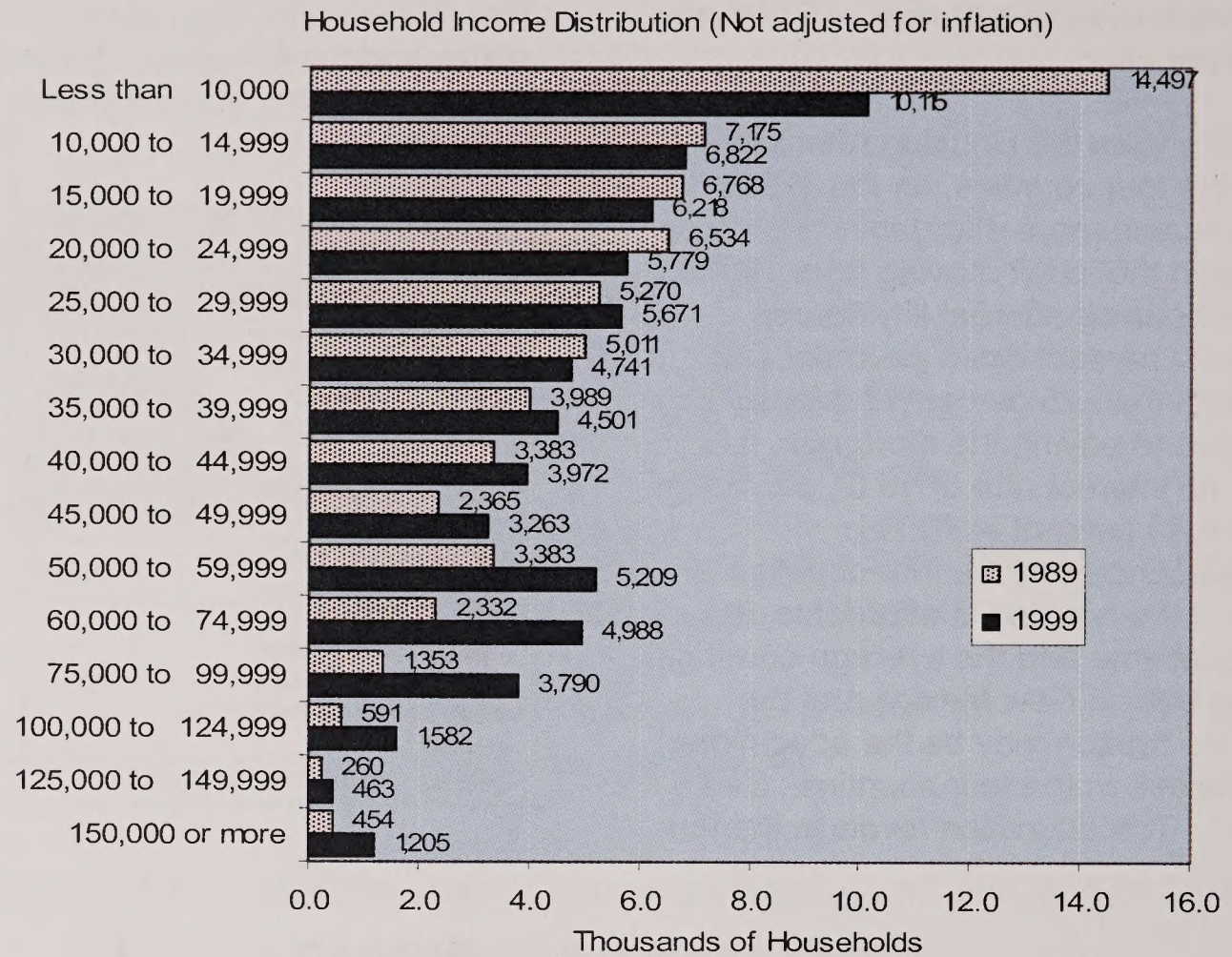


FIGURE 3-7 INCOME DISTRIBUTION



Source: Census 1990 and 2000

TABLE 3-11 HIGH SCHOOL EDUCATION LEVELS					
PERCENTAGE OF ALL WORKERS					
EDUCATION LEVEL	CHAVES, EDDY, LEA & ROOSEVELT COUNTIES	NEW MEXICO	WESTERN REGION	MOUNTAIN DIVISION	UNITED STATES
Less than High School	29	21	20	16	20
High School Diploma	28	27	23	23	29
Some college, college and advanced degrees	43	52	57	61	51
Source: Census 2000					

4 - Environmental Consequences



CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter describes the predicted consequences, or potential effects, on the environment of implementing the alternatives described in Chapter 2. The chapter begins with a summary of the methods used for the impact assessment, describes the impacts that are common to all alternatives, and summarizes the potential impacts that could result from each alternative.

Using the information describing the existing condition of the environment (Chapter 3) and a description of the activities that may occur in the reasonably foreseeable future within the Planning Area, the types of impacts that could result from implementing the alternative plans were identified. The inherent difficulty of a broad environmental impact statement such as this is to describe potential impacts from a project action when exact locations of project sites are not known.

Impacts are defined as modifications to the environment, as it presently exists, that are brought about by an outside action. Impacts can be beneficial (positive) or adverse (negative), and result from the action directly or indirectly. Impacts can be permanent, long-lasting (long-term), or temporary (short-term). In the case of this analysis, long-term impacts are defined as those that would extend beyond 10 years. Short-term impacts are defined as those changes to the environment during ground-disturbing activities that generally would revert to pre-disturbance conditions at or within a few years of the end of ground disturbance. Short-term impacts are defined as those occurring within 10 years. Impacts can vary in significance from no change, or

only discernible change, to a full modification or elimination of the environmental condition.

Federal statutes charge BLM to manage public land and resources based on the principle of multiple-use. While the driving force for change is the need to change management prescriptions in the context of special status species habitat, other uses of public land and resources come into play. In addition to analyzing the impacts of changing the prescriptions for managing special species habitat, this EIS would also analyze the impacts of designating interstate utility corridors in the Planning Area, oil and gas leasing, the subsequent development of those oil and gas leases through the reclamation phase, livestock grazing, and off-highway vehicle (OHV) use designations

ANALYTICAL ASSUMPTIONS

The following describes the assumptions used in the analysis of impacts.

Lands and Realty

Actions authorized under the lands and realty program would support other resource programs, respond to public demand for land use authorizations, and acquire administrative and public access where necessary.

Fluid Minerals

The basic assumption for mineral resources is that there would be demand for the resource regardless of the action taken and that some level of exploration and development of resources would be allowed.

BLM planning guidance for oil and gas leasing directs the agency to make land use plan decisions (such as this RMPA) at the following four levels:

- Lands open for leasing subject to existing laws, regulations, formal orders, and the conditions of the standard lease form;
- Lands open to leasing subject to moderate constraints such as seasonal and controlled surface use restrictions;
- Lands open to leasing subject to major constraints such as a no surface occupancy stipulations; and
- Lands closed to leasing. Lands closed to leasing are areas where it has been determined that other land uses or resource values cannot be adequately protected with even the most restrictive lease stipulations and appropriate protection can be ensured only by closing the lands to leasing.

Plan-level decisions, such as this RMPA, to open lands to leasing represents BLM's determination, based on the information available at the time, that it is appropriate to allow development consistent with the terms of the lease, laws, regulations, and orders, and subject to reasonable conditions of approval. When applying leasing restrictions, BLM guidance states the least restrictive constraint meeting the resource protection objective should be used.

The assumptions for surface disturbance from access roads, drill pads, pipelines, power lines, and seismic activity were originally published in Appendix 18 of the Draft Roswell RMP/Carlsbad RMPA. Some of the values reflect values for exploration and development in new areas. Much of the Planning Area is within or near well-developed fields. Exploration and development of resources in well-developed areas reduces the distance required for roads, pipelines, and power lines. The

surface disturbance assumptions were modified to estimate impacts associated with oil and gas exploration and development drilling activities in developed areas.

- Stabilization of surface disturbance is expected to occur within 3 years.
- Access Roads: 14 foot-wide travel way, 1.5 acres disturbance per access road, .75 acre disturbance stabilized per access road per well.
- Drill Pads: 1.4 acres disturbance per average well pad (250' x 250'), 1.0 acre stabilized per abandoned well.
- Pipelines: 1.6 acres initial disturbance per producing well (30 foot right-of-way width), .75 acres stabilized per producing well, 0.5 acres stabilized per abandoned producing well.
- Power lines: .5 acre initial disturbance per producing well, 0.25 acres stabilized per well.
- Statistics on drilling activity and surface disturbance assumptions were used to project acres of disturbance, stabilization, and net long-term disturbance for the Planning Area. Disturbance estimates are based on the most probable future projection of drilling activity on Federal lands for the next 20 years.
- Approximately one acre is disturbed per mile of geophysical line. In the Roswell Field Office, approximately 150 miles of new geophysical lines are anticipated per year. In the Carlsbad Field Office, approximately 700 miles of new geophysical lines are anticipated per year. Reclamation of disturbance is expected to occur within 3 to 5 years.

- An average of 5 acres per well was used to determine surface disturbance in Chapter 4 discussions and are shown in Table AP7-5. This is a total acreage value and includes surface disturbance from roads, pipelines, power lines and other activities associated with exploration and development of oil and gas resources.

Alternative Energy

There would be little or no opportunity for geothermal or biomass generation within the Planning Area. Therefore, these types of generating sites would not be considered. Only commercial solar and wind generator sites would be considered in this plan amendment. The impacts of wind energy development and operation would be similar to those analyzed in the 2005 Wind Energy Programmatic EIS. Solar collectors would be assumed to be 10 feet by 100 feet in size and collectors would be placed immediately adjacent to each other.

Soils

Actions that make soils more susceptible to erosion, or which impair soil productivity include, but are not limited to:

- soil disturbing activities that result in soil loss due to accelerated wind or water erosion;
- activities that reduce vegetative cover, thus exposing the soil to erosion processes, and reducing the amount of soil organic matter and soil productivity;
- activities that tend to concentrate surface runoff or steepened hydraulic gradients, thus increasing soil erosion by flowing water;
- activities that result in sediment loading directly to streams;
- activities that damage soil structure by compaction or other means; and
- activities that degrade the physical, chemical, or biological properties of the soil, such as high-intensity burns,

contamination by toxic substances, or other means.

Water Resources

Surface disturbance in the Planning Area may result in degradation of surface water and groundwater quality resulting from non-point source pollution, increased soil losses, increased erosion and reduced percolation of water into the ground.

Floodplains

Surface disturbance in the Planning Area can result in impairment of the floodplain values from removal of vegetation, removal of wildlife habitat, impairment of water quality, decreased flood water retention, and decreased groundwater recharge.

Air Quality

Surface disturbing activities and exhaust emissions, chemical odors, and dust from motorized equipment can affect air quality.

Vegetation

Natural forces or land uses that cause surface disturbance can reduce the cover or change the composition of the vegetative resource. As more cover is lost and/or less desirable species increase in composition, the likelihood of negative effects is increased. Habitat restoration and brush control treatments would occur, with the size and type of treatments varying by alternatives.

Livestock Management

The following assumptions were made:

- Monitoring at existing permanent rangeland study plots, Public Land Health Standards assessments, and Sensitive Species habitat studies would continue, regardless of alternative.

- Under current regulations, BLM has the authority to make adjustments necessary to meet the management objectives of the Resource Management Plan Amendment.
- Fluctuations in annual use are expected due to factors such as weather conditions and the price of livestock.
- Range improvements would continue to be implemented to enhance rangeland management practices and rangeland health conditions.

Wildlife including Special Status Species

The following assumptions were made:

- Dependent upon the alternative being analyzed, oil and gas leasing and development would continue.
- Livestock grazing at permitted levels would remain, but the actual level of authorized use may vary on an annual basis and between alternatives.
- Through all alternatives wildlife habitat and range improvements would continue to be implemented to enhance rangeland management practices and rangeland health conditions.
- OHV use would continue, with varying levels of use and expansion between alternatives.
- Activities conducted by Wildlife Services would continue across the Planning Area as needed to protect livestock from predation.
- Wildlife research and monitoring studies would continue. This data would be important in evaluating the implementation of conditions of approval, reclamation procedures, habitat use, distribution, and management activities.
- BLM would participate in and support the efforts of the Implementation Team for the Conservation Strategy.

Fire Management

Fires occurring in the Planning Area are wind-driven events, spreading rapidly with a relatively low intensity. Recovery from fire is highly dependent on available soil moisture and the amount of ensuing rainfall.

Cultural Resources

Land uses requiring surface disturbance can impact cultural resources. The more disturbance that occurs, the greater likelihood there is for negative effects. BLM has received no indications of traditional cultural properties or sacred sites from the Native American tribes and pueblos. Therefore, the assumption is the Planning Area contains none of these properties.

Paleontology

Land uses causing surface disturbance can impact paleontological resources. The more disturbance that occurs, the greater the likelihood there is for negative effects.

Recreation

The demand for recreation opportunities on public land would continue.

Off-Highway Vehicle (OHV) Management

As OHV activity gains in popularity, outdoor recreation planners expect this activity to continue. BLM would provide opportunities for responsible OHV use within the Planning Area while protecting special status species habitat.

Visual Resources

Visual Resource Management would be consistent throughout the Planning Area in both the Roswell Field Office and Carlsbad Field Office.

Environmental Justice

There are no areas within the Planning Area that meet the definitions of low-income areas or the contain minority populations. Therefore, none of the alternatives analyzed in this document would place a disproportionate share of negative environmental consequences on low-income or minority populations in or around the Planning Area.

Social and Economic Conditions

In this analysis, the following assumptions were made:

- For the No Action Alternative, and Alternatives A, B, C and D, development of existing oil and gas leases would continue in the Planning Area.
- Livestock grazing would continue in the Planning Area under the No Action Alternative and Alternatives A, B, C and D subject to existing regulations; and the measures detailed in the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing.
- Grazing permittees seldom use their full active preference for a variety of reasons which include previous agreements with the BLM, management prescriptions, economic factors, and the availability of water and forage.
- Any description of livestock grazing changes in this document discusses those changes in terms of full active preference.

IMPACT TYPES

The analysis includes three types of effects (see 40 Code of Federal Regulations [CFR] 1508.7 and 1508.8) as described below:

- *Direct effects* are caused by the proposed action and occur at the same time and place.

- *Indirect effects* are caused by the proposed action and are later in time or farther in distance, but are still reasonably foreseeable.
- *Cumulative effects* result from incremental impacts of the proposed actions when added to other past, present, and reasonably foreseeable future actions regardless of what person(s) or agency (Federal or non-Federal) undertakes those actions.

Reasonably foreseeable future actions consist of projects, actions, or developments that can be projected, with a reasonable degree of confidence, to occur within a defined time frame and that would impact the same, or portions of the same, resource. This document reflects a broad, integrated land use planning analysis for a large geographic area that would result in prescription of general standards and controls, and procedures for subsequent implementation of future projects. Therefore, major past, present, and future actions and their relation to potential activities in the Planning Area are addressed generally.

The analysis of unavoidable adverse impacts, short-term versus long-term productivity, and irreversible and irretrievable impacts is incorporated into the discussions that follow. If they are not discussed specifically, there are none. In order to determine the vulnerability of resources to impacts, resources were evaluated in terms of the following general criteria:

- Resource significance—a measure of formal concern for a resource through legal protection or by designation of special status
- Resource sensitivity—the probable response of a particular resource to project-related activities
- Resource quality—a measure of rarity, intrinsic worth, or distinctiveness,

including the local value and importance of a resource

- Resource quantity—a measure of resource abundance and the amount of the resource potentially affected.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED

The following critical elements are not present in the Planning Area: Prime or Unique Farmlands, Wetlands or Riparian Zones, Wild and Scenic Rivers, and Wilderness or Wilderness Study Areas. There are no perennial playas, lakes, rivers, or streams in the Planning Area. No wetlands or riparian zones occur in the Planning Area

Analyses of impacts indicate that there are no changes from the No Action Alternative when compared to Alternatives A through E for the following critical elements: Invasive and Nonnative Species, Hazardous or Solid Wastes, and Native American Religious Concerns. Regardless of the alternative and their associated prescriptions, impacts to these elements would be the same as No Action. Therefore, impacts to these elements have already been analyzed and described in existing planning documents.

IMPACTS COMMON TO ALL ALTERNATIVES

Lands and Realty

The majority of realty actions require short-term use of lands, and long-term productivity is restored upon rehabilitation of disturbed areas. Unavoidable adverse economic impacts would result from constraints for resource protection that impact the routes selected, and from timing restrictions on construction activities. These impacts would be delays in construction and increases in distance from realignments resulting in increased construction costs.

The greatest impact would be in those areas which, in accordance with approved existing RMPs are currently managed as no surface occupancy areas and avoidance or exclusion areas for ROWs, permits and leases. Short term impacts on long-term productivity due to exclusion of ROWs, permit and lease development could include increased project costs due to an increase in length of the right-of-way to avoid restricted ROW areas, or NSO areas in the case of oil and gas leases.

The designation of interstate utility corridors would confine impacts (surface disturbance and habitat fragmentation) of these projects to localized areas. Positive long-term impacts would include the public knowledge of where these projects would be located, reducing planning time and costs of such projects. Designating corridors would also meet the requirements for ROW avoidance/exclusion areas.

Land tenure adjustments would occur only if the benefits outweigh any adverse impacts, and if there are no significant impacts that cannot be mitigated. The sale or exchange of isolated tracts would result in the disposal of land that is difficult and uneconomical to manage. Negative impacts would be associated with the creation of split ownership if the mineral and surface estates are not kept intact. Positive long-term impacts would be increased efficiency and lower costs in managing the public land.

BLM's effort to work with all parties involved for the removal unused power lines and poles within the Planning Area would reduce habitat fragmentation and restore habitat for the lesser prairie-chicken. This effort is already bearing fruit. Since BLM began developing this EIS one electric cooperative has voluntarily removed 157 poles and nearly 16 miles of wire within the Planning Area. This work has reduced habitat fragmentation directly affecting approximately 2,195 acres.

Fluid Minerals

BLM has the authority to control the density and location of surface disturbing activities affecting public land and those activities associated with Federal mineral exploration and development. BLM has the authority to designate areas as closed or open to oil and gas leasing, attach a NSO stipulation to leases, and attach other conditions of approval (COA) that are included in approved applications for permit to drill (APDs). BLM can also attach other conditions of surface use (CSU) stipulations such as requirements for wildlife surveys or for plans of development (PODs). Use of these designations, stipulations or COAs provides effective tools for development of mineral resources and management of the accompanying surface disturbance.

No new leasing of Federal minerals and attaching a NSO stipulation may result in an increase and development of private and State minerals adjacent to leased and unleased Federal lands.

Reclamation Best Management Practices (BMPs) are common to all alternatives. BMPs are tools to be used in the effort to return areas that have had surface disturbance (such as drill pads and roads) to natural conditions. For a description of these BMPs, see Appendix 5. Combining the use of BMPs with the methods described above would reduce initial surface disturbance (direct impacts) and increase opportunities for reclamation success.

Drainage occurs when a deposit of either oil or natural gas is "drained" or removed either through existing pressure or pumping from adjacent lands (not in the same spacing or allocation unit). These deposits may extend beyond the surface ownership boundaries and a well drilled on one surface owner may drain the resource underneath an adjacent surface owner. When BLM designates an area closed to new oil and gas leasing, the Federal government can not collect royalties

even though oil or natural gas may be drained from adjacent properties. To avoid this situation BLM sometimes leases tracts Closed to leasing with an NSO stipulation.

Authority for the exploration and development of locatable, saleable, or solid leasable minerals is common to all alternatives except for the ACEC alternative (Alternative E) where no mineral entry is allowed.

Soils

Direct impacts common to all alternatives resulting from oil and gas development and surface use activities, include removal of vegetation, exposure of the soil, mixing of soil horizons, soil compaction, loss of top soil productivity and susceptibility of the soil to wind and water erosion. Wind erosion would be expected to be a minor contributor to soil erosion with the possible exception of dust from vehicle traffic. These impacts could result in increased indirect impacts such as runoff, erosion and off-site sedimentation. Activities that could cause these types of indirect impacts include construction and operation of well sites, access roads, gas pipelines, and facilities.

Contamination of soils from drilling and production wastes mixed into soils or spilled on the soil surfaces could cause a long term reduction in site productivity. Some of these direct impacts can be reduced or avoided through proper design, construction and maintenance and implementation of BMPs. The impacts to soil resources are analyzed by comparing the total number of acres of new surface disturbance from oil and gas development for each alternative.

Direct impacts common to all alternatives resulting from OHV use include removal of vegetation, exposure of soil, mixing of soil horizons, soil compaction, loss of top soil productivity and susceptibility of the soil to wind and water erosion. Wind erosion would be expected to be a minor contributor to soil erosion with the possible exception of

dust from vehicular traffic. These impacts could result in increased indirect impacts such as runoff, erosion and off site sedimentation. Activities that could cause these types of indirect impacts include use of existing trails and roads.

Water Resources

Potential direct impacts that would occur due to oil and gas development and surface use activities include increased surface water runoff and off-site sedimentation brought about by soil disturbance: increased salt loading and water quality impairment of surface waters; channel morphology changes due to road and pipeline crossings; and contamination of surface waters by produced water. The magnitude of these impacts to water resources would depend on the proximity of the disturbance to the drainage channel, slope aspect and gradient, degree and area of soil disturbance, soil character, duration and time within which construction activity would occur, and the timely implementation and success or failure of mitigation measures.

Direct impacts would likely be greatest shortly after the start of construction activities and would likely decrease in time due to natural stabilization, and reclamation efforts. Construction activities would occur over a relatively short period; therefore, the majority of the disturbance would be intense but short lived.

Petroleum products and other chemicals, accidentally spilled, could result in surface and groundwater contamination. Similarly, possible leaks from reserve and evaporation pits could degrade surface and ground water quality. Authorization of the proposed projects would require full compliance with BLM directives and stipulations that relate to surface and groundwater protection.

Potential direct impacts that would occur due to OHV use activities include increased surface water runoff and off-site sedimentation brought about by soil

disturbance: increased salt loading and water quality impairment of surface waters and channel morphology changes due to road and trail crossings.

Floodplains

Direct impacts common to all alternatives resulting from oil and gas development and surface use activities that affect floodplain values, include removal of vegetation, removal of wildlife habitat, impairment of water quality, decreased flood water retention, and decreased groundwater recharge. However surface disturbance would not be allowed within up to 200 meters of the outer edge of 100-year floodplains, to protect the integrity of those floodplains.

Air Quality

Air quality would temporarily be impacted from exhaust emissions, chemical odors, and dust from motorized equipment used to construct the access road, well pad, and by the drilling rig used to drill the well. Dust dissemination would decrease upon completion of the construction phase of the access road and well pad.

Air pollution from the motorized equipment would decrease at the completion of the drilling phase of the operations. Emissions from machinery and leaks or releases from wells or pipelines could result in airshed degradation. Blowouts and accidents during drilling and production could result in well fires and release of gases. The winds that frequent the southeastern part of New Mexico generally disperse odors and emissions. The impacts to air quality would be greatly reduced as the construction and drilling phases are completed.

In addition to direct impacts to air quality, indirect impacts from activities authorized by BLM would include contributions to climate change. These impacts may be regionally additive or synergistic. Currently, there are

no regulations applicable to climate change, although there is much discussion regarding potential carbon emissions.

Direct impacts common to all alternatives resulting from OHV use include exhaust emissions and dust.

Vegetation

Vegetative BMPs are common to all alternatives. BMPs are tools to be used in the effort to return areas that no longer meet Rangeland Health Standards or have had surface disturbance (such as drill pads and roads) to natural conditions. For a description of these BMPs, see Appendix 5.

Positive impacts would generally be accomplished through brush control treatments or disturbed area restoration techniques that are designed to move plant communities towards a desired plant community. This would result in an improved water cycle, reduced erosion potential, and better habitat for wildlife and livestock use. Short term negative impacts to livestock use would include taking a portion of the allotment out of use while the vegetation is allowed to recover following treatments. Once the vegetation recovers, these actions would result in long term benefits in improved vegetation production and composition.

Direct negative impacts to vegetation include loss of plant cover due to energy exploration and development, loss to fire, and impacts of livestock grazing. These impacts can be minimized or negated by proper design of pads and roads, reclamation techniques, fire suppression tactics, and appropriate livestock management.

Non-Native and Invasive Species

The detection of new invasive plant species populations, prevention of the spread of new invasive populations, management of

existing populations using tools of integrated weed management, and eradication of invasive populations is common to all alternatives. Regardless of alternative, existing management guidance in the Planning Area would continue and any pertinent Federal, State, or local law would be in effect for management of these species.

A negative impact following treatments would be a slight increase in erosion potential due to the temporary reduction of vegetative cover. Once more desirable plants establish, this impact would be mitigated.

Positive impacts would generally be accomplished through chemical or mechanical control treatments that are designed to reduce or eliminate invasive plant species populations and move plant communities towards a desired plant community. Reducing or eliminating non-native and invasive plant populations would result in an improved water cycle, reduced erosion potential, and better habitat for wildlife and livestock use.

Livestock Management

Livestock use levels within the Planning Area are expected to reflect those in the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management Draft Resource Management Plan Amendment/Environmental Impact Statement (Feb. 1999). Statewide, approximately 20 percent of the allotments were estimated to not meet the standards. In order to have these allotments meet the standards, a 20 percent reduction in AUMs could be necessary. Based on these Statewide numbers, an initial reduction of 7,660 AUMs could occur within the Planning Area. It was also assumed that of those allotments not meeting a standard, 22 percent would no longer use the Federal permit or lease, due to increased regulation and operating costs to the ranch. Within the

Planning Area, this would equal five allotments where the permittee or lessee would quit ranching.

Short term negative impacts would include fewer livestock being grazed, limited use in certain pastures to achieve desired cover for lesser prairie-chicken, increased costs in moving cattle to implement various grazing strategies, or not being able to graze certain pastures while vegetative treatments are allowed to recover. Smaller ranch operations having to implement grazing guidelines would be affected more than larger operations as they generally have fewer resources and less flexibility.

Long term positive impacts would include meeting habitat needs of special status species, improved ranching operations as a result of following grazing strategies, and a more diverse forage base due to vegetative treatments.

Wildlife

Designating interstate utility corridors would reduce habitat fragmentation particularly those caused by electric transmission lines. This reduced fragmentation would occur due to limiting the ROWs to a smaller area, e.g. 3,500 feet wide corridor, rather than scattering major ROWs throughout the Planning Area. Burying interstate pipelines would produce short-term surface disturbance. Applying BMPs and reclamation prescriptions would reduce long-term effects within the Planning Area.

Concurrent with BMPs confining smaller ROWs developments to existing alignments would reduce surface disturbance and fragmentation of habitat across the Planning Area. Maximizing multiple occupancy of these ROWs would confine these impacts to central locations. Exclusion areas for rights-of-way for major projects as shown on Map 3-1 would also limit habitat loss and surface disturbance.

Allowing pipelines less than 5 inches in diameter to be laid on the surface and not buried would reduce direct impacts to vegetation and the indirect impacts to habitat by reducing subsequent habitat fragmentation.

Impacts from typical geophysical exploration operations would continue to displace wildlife from the area of disturbance during the operation. Mobile wildlife species would return once operations were complete. Creation of new roads from repeated vehicular travel during geophysical exploration, and possible continued use by the public, may reduce the area of undisturbed wildlife habitat, thereby potentially decreasing the quality for lesser prairie-chickens, sand dune lizards, raptors, mule deer and pronghorn antelope. Increased disturbance and human access would directly impact important habitat features such as booming grounds, nesting areas, and fawning areas. There would be cumulative negative impacts to wildlife habitat resulting from repeated geophysical activity conducted in the same area over time. In order to reduce impacts to wildlife, pathways created by repeated geophysical would not be open for general public use. Access to these pathways would be signed and/or physical barriers would be used to block access.

Under all alternatives, surface use and occupancy requirements would be implemented to mitigate the impact from oil and gas development in sand dune lizard and in lesser prairie-chicken habitat. Protective measures taken on public land and Federal mineral estate are typically not required on adjacent private and State trust lands that do not have Federal mineral estate. Therefore, relative to adjacent private and State trust lands, public land gains importance for lesser prairie-chicken and sand dune lizard habitat in the shinnery oak-dune community.

Implementation of New Mexico Standards for Public Land Health takes into account the uses of the land and evaluates their impact to the biotic community through the analysis of biotic indicators. When indicators are not meeting the biotic standard, and the causal factor is livestock grazing, the Guidelines for Livestock Grazing would be implemented to mitigate those impacts. This would result in improved rangeland conditions and promote wildlife habitat and future wildlife populations.

No long-term impacts are expected as a result of the livestock grazing program as proposed. Necessary adjustments to stocking rates or implementation of management prescriptions, utilizing rangeland and wildlife monitoring data, would have positive impacts to wildlife habitat.

The implementation of invasive brush control projects (e. g. mesquite, catclaw) necessary to achieve Standards for Public Land Health would have long-term positive impacts to wildlife habitat quality, quantity and would provide the basis for possible increases in wildlife populations. Future evaluations of the allotments within the watershed within the Planning Area would indicate the possible extent of these projects. Based on current funding and project implementation, it is anticipated that approximately 6,500 acres per year (130,000 acres over the life of the plan) would be treated for invasive brush species.

Implementation of the Standards for Public Land Health would result in improved vegetation structure for lesser prairie-chicken habitat over the long term. Identification of allotments and pastures not meeting the biotic standard would focus efforts on those areas needing improvement. Long term positive impacts to lesser prairie-chicken habitat would result.

Assessing and ensuring the vertical structure (Robel Pole method of monitoring)

of nesting cover across the range of the lesser prairie-chicken would increase nesting success by reducing nest predation. Impacts to lesser prairie-chicken occur when livestock use exceeds normal production rates. Drought conditions along with little change in livestock numbers can increase negative impacts to the quality and quantity of lesser prairie-chicken habitat.

Implementation of the BMPs (Appendix 5) would provide a flexible platform to minimize direct habitat loss and fragmentation. These BMPs would minimize habitat fragmentation, surface disturbance and expedite habitat restoration.

Long-term positive impacts to lesser prairie-chicken and sand dune lizard habitat would result from the coordinated efforts to reclaim and restore habitat. Restoration of developed sites is a key in re-establishing lesser prairie-chicken and sand dune lizard populations in areas that were once occupied. Creating partnerships and participation by individuals, other agencies and organization is vital to the restoration process. BLM's participation in the Conservation Strategy's Implementation Team would aid this effort.

Special Status Species

Special status species include all State and Federally-listed threatened and endangered species and other species given special attention by agencies. The latter includes species designated as Sensitive by BLM in New Mexico, candidate and Species of Concern by the US Fish and Wildlife Service (USFWS), and Species of Concern by the New Mexico Department of Game and Fish (NMDGF).

In accordance with Section 7(a) 2 of the Endangered Species Act (ESA) of 1973, as amended, the BLM, Pecos District Office, requested informal consultation for the Special Status Species Plan Amendment and Environmental Impact Statement (EIS) for public land within New Mexico. A

Biological Assessment (BA) was prepared that provided detailed analysis of all Federally-listed (threatened and endangered), proposed and candidate species that may be affected by the Preferred Alternative (see Appendix 10). All anticipated environmental effects (direct and indirect) were included in the BA.

Based on the discussions and analyses described in the Biological Assessment, including the development of conservation measures, determinations were made that the Preferred Alternative would have a "No Effect" for 17 species: **Endangered Species:** black-footed ferret, Northern aplomado falcon, interior least tern, Kuenzler's hedgehog cactus, Pecos gambusia, Sneed pincushion cactus, Koster's springsnail, Pecos assiminea snail, Roswell pyrg, Noel's amphipod; **Threatened Species:** bald eagle, Mexican spotted owl, Pecos bluntnose shiner, Pecos sunflower, gypsum wild-buckwheat, Lee pincushion cactus; and **Candidate Species:** Texas hornshell. With a determination of "No Effect," further consultation between USFWS and BLM is not required.

The Biological Assessment also made a determination of "May Affect-Not Likely to Adversely Affect" for two species, the lesser prairie-chicken and sand dune lizard. With this determination USFWS and BLM entered into inter-agency coordination pursuant to Section 7(a)2 of the Endangered Species Act (ESA). Under this section of ESA, USFWS provides technical assistance to BLM to protect, improve, and enhance habitat for both species. See Appendix 6, Monitoring and Implementation.

Fire Management

Although wildfires have a relatively low-occurrence frequency in the Planning Area, fires can and do occur. Such a fire would possibly threaten wildlife habitat, particularly the habitat used by the lesser prairie-chicken. Short-term (less than 10 years) impacts of wildfire would include the loss

nesting and brood rearing habitat as well as food sources.

Soils and topography would drive any decisions regarding suppression strategy in the Planning Area. Because of the sandy soils and dune topography, fire suppression strategies would be based on existing roads serving as control lines. Directing personnel and equipment to fight a fire using direct attack methods in these conditions raises the very real risk of loss of equipment, injury and loss of life due to the difficulty of traveling cross-country in loose sand. The BLM fire staff would actively and aggressively fight a fire in the Planning Area but safety and health considerations would remain paramount. (For more information about BLM fire policy, management, and fire occurrence frequency, see the 2004 Fire and Fuels Management Plan Amendment and Environmental Assessment for Public Land in New Mexico and Texas.)

Prescribed fire would continue to be a tool for vegetation manipulation in the mesquite grasslands found in the Planning Area. Use of prescribed fire would be limited to those situations in which rangeland health would be improved by its application under a specified prescription and threats to special status species would be negligible.

Cultural Resources

Federal laws, statutes, regulations and policy would remain in effect for identifying and protecting cultural resources. The amount of potential impacts to cultural resources would be determined by the alternative chosen which drives the amount of development. The Pecos District has invited the five tribes who claim ancestral affiliation to the Planning Area (Chaves, Eddy, Lea and Roosevelt Counties) to participate in development of this DEIS. These tribes are the Apache Tribe of Oklahoma, Comanche Indian Tribe, Kiowa Tribe, Mescalero Apache and Ysleta del Sur Pueblo. The BLM would continue to include the five tribes in future consultation efforts.

To date only the Kiowa Tribe has provided BLM with information. The Kiowa Tribe is concerned about impacts to cedars (*Juniperus virginiana*), red rocks, and oral history of the tribe along what is now the Texas-New Mexico border. The Planning Area contains few if any of this juniper species and the surface geology trends toward limestone, white to yellowish rocks.

Paleontological Resources

Federal law would continue to be in effect for protecting paleontological resources.

Recreation

Recreation would continue within the Planning Area. Public land users would still engage in wildlife viewing, hunting, hiking, and off highway vehicle activity.

Visual Resources

VRM classes remain unchanged throughout the Planning Area. Impacts to VRM would not differ across the alternatives and would remain the same. Low profile tanks and structures would apply in Classes I and II. Under some visual conditions low profile tanks and structures would be applied Class III. However if lesser prairie-chicken or sand dune lizard needs dictate otherwise, low profile recommendations may not apply in Class III visual areas. Painting stipulations from the Standard Environmental Color Chart and the Supplemental Environmental Color chart would apply.

Cumulative Effects

The boundary of the Planning Area was selected to encompass sand dune lizard and lesser prairie-chicken habitat under BLM administration. The resulting area captures the largest area in which lesser prairie-chicken and sand dune lizard habitat intersects with public land and concentrated

Federal mineral estate. Areas outside the Planning Area support habitat for both species but lack either public land or Federal minerals.

The Planning Area is part of the Permian Basin which overlaps western Texas and eastern New Mexico. The first oil well drilled in the New Mexico portion of the basin dates from the 1920s and the area continues to produce oil and natural gas. That production includes public land and Federal minerals within the Planning Area

Based on the calculations in Appendix 7 over the past 30 years, an average of 337 wells per year were drilled on Federal minerals within the Pecos District. During that same period, an average of 27 Federal wells were plugged and abandoned. Approximately 18 percent of the activity within the Pecos District occurs within the Planning Area. Using that percentage, approximately 61 wells per year can be expected to be drilled within the Planning Area, 10 within Roswell Field Office and 51 within Carlsbad Field Office.

Using the same calculations in Appendix 7, approximately five wells per year would be plugged and abandoned on Federal lands in the Planning Area, one within Roswell Field Office and four within Carlsbad Field Office. Eleven total wells would be plugged in the Planning Area.

There are over 10,000 active oil and gas wells within the Pecos District and approximately 2,000 of these wells are in the Planning Area. There are active wells on adjacent State and private lands as well.

The 1997 Carlsbad RMPA and Roswell RMP analyzed surface disturbance as nine acres of initial surface disturbance for each well. This surface disturbance analysis included well pads, access roads and pipeline right-of-way. Also included in the analysis was reclamation in the amount of 5 acres per well within two years.

Using this analysis, the amount of surface disturbance from existing Federal wells ranges from 40,000 to 90,000 acres within the Pecos District. The amount of surface disturbance from existing Federal wells within the Planning area ranges from 8,000 to 18,000 acres.

Soils are directly impacted by this past surface disturbance. These direct impacts have been listed earlier in this chapter in the Soils section. Water resources and air quality are indirectly impacted by past surface disturbance. These indirect impacts have been listed earlier in this chapter in the Water and Air Quality sections.

The cumulative impacts of wind generators have been analyzed in the 2005 Wind Energy Programmatic EIS, Chapter 6, pages 6-1 through 6-5. The impacts analyzed include the short term positive impacts on the local economy during construction and the long term positive impacts of renewable energy generation. Of the 13.4 million acres of public land within New Mexico, the EIS determined 9,800 acres were economically developable. None of these 9,800 acres are located in the Planning Area.

Currently, there are no alternative energy generating sites within the Planning Area powered by either wind or solar. A wind energy site is located north of Kenna, New Mexico on State trust land. There is also a proposal for a wind energy farm in the western portion of the Carlsbad Field Office adjacent to National Forest land.

The history of livestock grazing in the Planning Area is similar to much of the southwestern United States prior to the mid-twentieth century. A small number of ranchers used intermixed private and public land to support livestock, including cattle and horses within the Planning Area. The Federal grazing program in the Planning Area was initiated with the implementation of the Taylor Grazing Act in 1934. The

program has since been administered by BLM (previously the Grazing Service and the Division of Grazing). Impacts of livestock grazing within the Pecos District and the Planning Area were previously analyzed in the 2001 New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management EIS.

Within the Planning Area, both Field Offices have over 20 years of vegetation monitoring data gathered at permanently established study plots. Overall, this data indicates that range condition, plant composition, and vegetative cover values have shown little change over this time period. Generally, range condition ratings have been in the mid-fair to mid-good classes and composition and cover values are in line with those described in the NRCS Range Site Descriptions. While the Roswell Field Office has just begun the Rangeland Health Standards assessment process within the Planning Area, the Carlsbad Field Office has completed assessments on about 15 percent of the allotments, mainly in conjunction with the grazing permit renewal process. Information specific to individual allotments can be found in monitoring files in both field offices or at the Vegetation Monitoring and Analysis Program web site (http://nms03web2/vmap/vmap_home.htm).

Chapter 3 of this document outlines the recent natural history of the lesser prairie-chicken and the sand dune lizard. Declines in population can be attributed to habitat loss through a combination of factors, including drought, habitat fragmentation, surface disturbance, avoidance of human infrastructure and habitat conversion. Naturally occurring fluctuations in populations have been exacerbated by these factors.

Implementing the BMPs (see Appendix 5) would reduce initial surface disturbance and accelerate recovery of the vegetation. Current reclamation efforts, coupled with

BMPs would improve the recovery of vegetation in the Planning Area in the short-term.

Intermixed with public land and Federal minerals within the Planning Area are New Mexico State trust land (see Table 1-1 and Map 1-1). Activities occurring on public land and Federal minerals also occur on State trust land and the impacts of livestock grazing and energy development are present on the land. The New Mexico State Land Office shares many of the same concerns regarding special status species with BLM. To address those concerns, the State Land Office has taken the following steps within the Planning Area:

- Participated in the development of a Conservation Strategy designed to prevent the Federal listing of the lesser prairie-chicken and sand dune lizard.
- Agreed to be a cooperating agency in the development of this RMPA and EIS.
- Withdrew approximately 109,222 acres of chicken habitat from oil and gas leasing availability for a 3-year period. After this period, the status of both species would be reviewed to determine whether more, less, or different parcels of land should be withdrawn in the future.
- Cooperating with BLM and private landowners to mitigate impacts to lesser prairie-chicken nesting and brood-rearing habitat through livestock management and brush management practices.
- Working with sand dune lizard researchers at Texas A&M University to thoroughly evaluate the effects of oil/gas well pad density on lizard habitat.
- Identifying parcels of State land in sand dune lizard habitat areas for focused conservation and management efforts.
- Cooperating with other State, Federal (including BLM), and private stakeholders to develop a lesser prairie-chicken propagation program and

captive rearing facility to complement other conservation efforts.

- Prioritized and seeking voluntary compliance of oil and gas lessees in optimal lesser prairie habitat for installation of muffler covers at well pads.
- Prioritized and is currently seeking out ranchers for EQIP funding to implement reclamation of abandoned well pads in optimal lesser prairie-chicken habitat.
- Contributed over 100,000 toward the lesser prairie-chicken/sand dune lizard conservation process thus far, with additional contributions likely to follow.

NO ACTION ALTERNATIVE

The following impact analyses would result from the implementation of the No Action Alternative.

Lands and Realty

Direct and indirect impacts are described in the "Impacts Common to All Alternatives" section of this chapter.

Fluid Minerals

Noise and timing restrictions are existing standard operating procedures and would have no additional impact.

No new drilling within 200 meters of leks known at the time of permitting is standard operating procedures and would have no additional impact.

No surface occupancy would be allowed within 100 meters of "suitable habitat" for sand dune lizard is standard operating procedures and would have no additional impact.

The reasonable and foreseeable development (RFD) projections developed for this EIS are based on drilling statistics for the past 30 years (see Appendix 7 and

Appendix 18 of the 1994 Draft Roswell RMP and Draft Carlsbad RMPA). The RFD does not imply any drilling restrictions or limitations but is simply a forecast of anticipated activity. The actual number of wells drilled per year varies from year to year.

The RFD indicates that approximately 61 wells per year would be drilled and 11 wells per year would be plugged and abandoned in the Planning Area. Direct impacts include surface disturbances of approximately 305 acres of which approximately 140 acres would be reclaimed and stabilized by the end of three years. Successful reclamation of the plugged and abandoned wells would total approximately 18 acres.

Cumulative Effects

Based on the calculations in Appendix 7 over the past 30 years, an average of 337 wells per year were drilled on Federal minerals within the Pecos District. During that same period, an average of 27 Federal wells were plugged and abandoned. Approximately 18 percent of the activity within the Pecos District occurs within the Planning Area. Using that percentage, approximately 61 wells per year can be expected to be drilled within the Planning Area, 10 within Roswell Field Office and 51 within Carlsbad Field Office.

Using the same calculations in Appendix 7, approximately five wells per year would be plugged and abandoned on Federal lands in the Planning Area, one within Roswell Field Office and four within Carlsbad Field Office. Eleven total wells would be plugged in the Planning Area.

Over the next 20 years, a total of 1,220 wells would be drilled in the Planning Area and approximately 220 wells would be plugged and abandoned. During that period approximately 6,100 acres of surface would be disturbed; 2,806 acres would reclaim and stabilize within three years of initial disturbance. Approximately 360 acres

would be reclaimed from plugged and abandoned wells.

Alternative Energy

Neither the 1988 Carlsbad Resource Management Plan nor the 1997 Roswell Resource Management Plan considered the impacts of alternative energy generation sites. Thus, BLM would have to consider any application for such a generation site on a case by case basis. Considering the size of wind and solar projects, the intensity of development associated with these projects and the potential for controversy, an environmental impact statement may have to be developed before such a project would be approved or denied.

The impacts to vegetation and wildlife by the construction and operation of wind energy sites have been analyzed in the 2005 Wind Energy Programmatic Environmental Impact Statement. These impacts are described in Chapter 5 of this document on pages 5-37 through 5-75. The EIS is available on-line at www.windeis.anl.gov.

Every solar collector (either concentrated or photo-voltaic) would produce an avoidance area for lesser prairie-chickens. The footprint of solar collectors is about 1,000 square feet or the equivalent of a small house. The Robel impact distances (see page 30 of Chapter 2, Table 2-3) indicate houses have an avoidance distance of 0.5 mile and an associated avoidance area approximately 500 acres in size.

Cumulative Effects

The cumulative impacts of wind generators have been analyzed in the 2005 Wind Energy Programmatic EIS, Chapter 6, pages 6-1 through 6-5. The impacts analyzed include the short term positive impacts on the local economy during construction and the long term positive impacts of renewable energy generation. Of the 13.4 million acres of public land

within New Mexico, the EIS determined 9,800 acres were economically developable. None of these 9,800 acres are located in the Planning Area.

Commercial solar collectors are not sited as single units. The typical commercial solar generation site places the collectors in large groups, each individual collector immediately adjacent to the next. Little, if any, vegetation would grow underneath the collectors. Therefore, the impact to vegetation and habitat would equal the footprint of the group or groups of collectors (measured in square feet or acres) plus the .5 mile avoidance radius.

Placed in groups of 1,000, commercial solar collector sites would directly impact the vegetation and wildlife habitat on approximately 230 acres. Indirect impacts to lesser prairie-chicken habitat would total approximately 1,840 acres through avoidance radii. Construction and operation of solar sites include short term positive

impacts on the local economy during construction and long-term positive impacts of renewable energy generation.

Soils

This alternative follows the current Roswell Field Office and Carlsbad Field Office RMPs. Current soil resource management strategies, in both the Carlsbad and Roswell Field Offices, would continue unchanged in the Planning Area. The direct impacts of new surface disturbance are shown in Table 4-1.

The other major impact to soil resources is Off-Highway Vehicle use. Direct impacts to soils by OHV use would be confined to designated OHV recreation areas. It would be difficult to quantify direct impacts to soils in the portion of the Planning Area managed by the Carlsbad Field Office since it is designated as open to OHV use. Some impacts to soils by cross-country OHV occur but how much is not known at this time.

TABLE 4-1, ACRES IMPACTED BY DRILLING

ALTERNATIVE	ESTIMATED NUMBER OF WELLS DRILLED PER YEAR	NUMBER OF ACRES DIRECTLY IMPACTED PER YEAR	ESTIMATED NUMBER OF WELLS DRILLED OVER 20 YEARS	NUMBER OF ACRES DIRECTLY IMPACTED OVER 20 YEARS	NUMBER OF ACRES RECLAIMED AND STABILIZED OVER 20 YEARS
No Action	61	305	1,220	6,100	2,806
A	51	255	1,020	5,100	2,346
B	49	245	980	4,900	2,254
C	49	245	980	4,900	2,254
D	54	270	1,080	5,400	2,484
E (5 years)	32	160	160	800	368

Water Resources

This alternative follows the current Roswell Field Office and Carlsbad Field Office Resource Management Plans. Current water resource management strategies, in both the Carlsbad and Roswell Field Offices, would continue unchanged in the Planning Area. The direct impacts of new surface disturbance are shown in Table 4-1.

Indirect impact to water resources would be higher in the portion of the Planning Area managed by the Carlsbad Field Office than the portion managed by the Roswell Field Office. This is due to the designation as open to OHV use and oil and gas field development (an average of 51 wells per year versus 10 wells per year).

Floodplains

This alternative follows the current Roswell Field Office and Carlsbad Field Office Resource Management Plans. Current floodplain resource management strategies, in both the Carlsbad and Roswell Field Offices would continue unchanged in the Planning Area. Impacts to floodplain resources would be most affected by surface disturbance. However, surface disturbance would not be allowed within up to 200 meters of the outer edge of 100-year floodplains, to protect the integrity of those floodplains.

Air Quality

This alternative follows the current Roswell Field Office and Carlsbad Field Office Resource Management Plans. Current air resource management strategies, in both the Carlsbad and Roswell Field Offices, would continue unchanged in the Planning Area. Impacts to air quality would be affected indirectly by surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

Vegetation

Current vegetation management strategies, in both the Carlsbad and Roswell Field Offices, would continue unchanged in the Planning Area. Brush control to meet New Mexico Standards for Public Land Health would reduce competition for water, improve the water cycle, allow a better grass cover, and improve habitat for all species. An additional benefit of improved grass cover would be reduced soil erosion and improved air quality due to lowered airborne particulate matter. Under this alternative, projects in the Planning Area would have to compete for limited funding against treatments proposed throughout both field offices. Recent treatments have averaged about 6,500 acres per year within the Planning Area, which would equal about 130,000 acres over the 20 year life of the plan.

Under current management prescriptions, treatments completed in the Roswell Field Office would have to be in place 5 years before adjoining areas could be treated.

As described in the Minerals section above, over the 20-year life of the plan, 6,100 acres of vegetation would be disturbed due to construction. Of that amount, approximately 2,806 acres would be reclaimed and stabilized during initial rehabilitation, and 360 acres would be recovered as plugged and abandoned wells are reclaimed. This leaves 2,934 acres of vegetative disturbance.

Cumulative Effects

Over the life of the plan, about 2,934 acres of vegetation would be lost to disturbances mentioned above. Changes in vegetation, not directly due to construction activities, would be most prone to amount and timing of precipitation. A prolonged drought could lead to a decrease in desirable grasses, shrubs, and forbs and an increase in less

desirable “invasive” type species.

Conversely, several years of above normal precipitation could result in an increase in desirable grasses, shrubs, and forbs and a decrease in less desirable “invasive” type species. Localized areas could see improvement in cover/composition due to livestock management prescriptions and vegetation treatment (brush control) projects.

Impacts to vegetation by off-highway vehicle use would continue in the Carlsbad Field Office portion of the Planning Area because it is designated as open to OHV use.

Impacts to vegetation in the Roswell Field Office portion of the Planning Area would be less because OHV use is designated as limited to existing roads and trails.

Livestock Management

Under this alternative, there would be no change to current livestock grazing management practices. See discussions above in the Impacts Common to All Alternatives section. Modifications to grazing permits/leases would be made based on the results of monitoring data and standards assessments. Should monitoring indicate a reduction is needed, this could result in a negative economic impact to ranching operations, due to fewer calves produced for market. Livestock grazing in pastures treated for brush control would be allowed after two growing seasons of rest has occurred. A short-term negative economic impact would be costs associated with moving cattle to other pastures or finding additional pastures while treated pastures are rested. A long-term benefit would be better forage resulting in, for example, higher quality calves or more calves to market.

Those allotments not meeting Public Land Health Standards could result in a reduction of up to approximately 7,660 AUMs on public land and approximately five operators opting to no longer continue in the livestock business. These five allotments would be

considered as candidates for the voluntary relinquishment described in Chapter 2.

Depending on the preference of these allotment operators, any number of these operators might select to voluntarily relinquish grazing on their allotment.

Prior to this plan amendment, and as part of the grazing permit renewal process, adjustments on eight allotments within the Planning Area have removed 836 Animal Units (AUs, which equals one cow yearlong) from public land use. This equates to 5,578 Animal Unit Months (AUMs or the amount of forage needed to support a cow/calf pair for one month). These adjustments were made based on rangeland monitoring study plot data and Robel Pole inventory data. The reductions were carried out using Rangeland Agreements to place these AUs in voluntary non-use. Seven of these eight allotments are in the Core Management Area (CMA) within the Roswell Field Office.

These reductions represent the majority of the adjustments that would need to be made within the CMA. Of these 836 AUs, 736 were in the RFO and equal 4,870 public land AUMs. This is about a 26 percent reduction within these allotments and a 66 percent reduction in AUMs currently authorized within the Roswell Field Office. Using these numbers for the Carlsbad Field Office, a 26 percent reduction in AUMs within those allotments that have the highest potential for lesser prairie-chicken habitat enhancement would result in 13,341 AUMs being placed in voluntary non-use via Rangeland Agreements. A 6 percent reduction in AUMs currently authorized within the Carlsbad Field Office would result in 7,011 AUMs being placed in voluntary non-use via Rangeland Agreements.

Overall, the amount of AUMs reduced could range from a low of 7,660 to a high of 18,919. The reductions would be based on rangeland monitoring study plot data, Robel Pole inventory data and Public Land Health Standards assessments. Factors such as successful brush control, favorable rainfall,

and suitable pasture rotation schemes could limit reductions to the low end of the scale. Conversely, limited brush control, drought conditions, and no pasture rotation schemes could push reductions towards the high end of the scale.

Cumulative Effects

See the Impacts Common to All Alternatives section. Reductions in livestock numbers or changes in season of use would negatively impact grazing operators. This would impact local businesses as grazing operators would have less disposable income to spend at businesses in and around the Planning Area. This is not expected to be significant, since many are already voluntarily reducing due to drought. This impact is expected to be localized to certain allotments or pastures, not Planning Area wide.

Wildlife including Special Status Species

The acquisition of lands identified in the current RMPs would have positive impacts to wildlife habitat. However; the positive impact would be less than those identified in Alternatives A and B. In the Planning Area, approximately 2,500 acres of private land and approximately 19,000 acres of State trust land have been previously identified for acquisition in Appendix 6 of the 1997 Roswell RMP.

Impacts on lesser prairie-chicken habitat by electric power lines, both existing and future construction, would continue. With a Robel impact radius of .25 miles, every 2 miles of power lines and poles yields 640 acres of avoidance by the species. No prescriptions within this alternative would mitigate this type of impact.

Based on the surface use and occupancy requirements (SUORs) of the 1997 Carlsbad RMPA and Roswell RMP no surface disturbance would be allowed in suitable sand dune lizard habitat located in occupied habitat or within 100 meters of

suitable habitat associated with the occupied habitat. This would result in the protection of microhabitats while allowing oil and gas development to occur.

Oil and gas development would initially result in the direct loss of wildlife habitat. Based on the 20-year projection, construction of well pads, roads, and pipeline operations would have direct effects on 6,100 acres of habitat (305 acres per year average) within the Planning Area (See Table 4-2).

TABLE 4-2 NO-ACTION ALTERNATIVE 20-YEAR PROJECTION (DIRECT IMPACTS) FOR OIL AND GAS DEVELOPMENT			
TYPE OF ACTION	NUMBER OF ACTIONS ON FEDERAL LAND	APPROXIMATE TOTAL ACRES DISTURBED	
		SHORT TERM (3-YEARS)	LONG TERM
Oil and Gas development wells	1,220	2,806	3,294

Construction activities would use heavy equipment for leveling pads and roads, trenching and backfilling pipeline corridors and building electrical power lines. Specific effects of this disturbance would include: soil churning, compaction, and loss of top soil; loss of vegetation cover, specific habitat features such as large shrubs, and species composition; and alteration of surface water flow, increased erosion, and increased likelihood of exotic plant species establishment.

These activities would cause direct disturbance and/or displacement of ground dwelling animals, disturbance and loss of habitat structures such as shrubs with nests, habitat loss through erosion, and changes in food and cover relationships due to vegetative change and increased erosion. Animal species composition and densities could change within and adjacent to any mineral development activity. Changes in the animal community and

habitat structure change in plant species composition and density would persist until habitat within the development areas is restored to near pre-disturbance conditions. However, re-vegetation of disturbed sites is typically very slow.

The indirect disturbance (e.g., associated with human activities) to wildlife species for non-producing wells (approximately 126 acres) would be short-term, not extending beyond the 1 to 3 months required to complete the drilling pad/road and would largely disappear after abandonment and reclamation. However, if oil and gas reserves were discovered the indirect wildlife disturbance would continue long term around the drilling pads, along the roads, pipelines and power lines.

A further effect on wildlife populations would be increased access, not only by industry personnel, but also the general public at large. This access would increase the overall disturbance within the area and potentially create additional effects including: shooting, poaching and collisions with vehicles.

Intensity of edge effect disturbance would be greatest adjacent to the construction area and extend outward, dissipating with distance. The edge effect could extend large distances (as much as 3/4 mile) from the disturbance. Edge effect would be initially larger (in terms of spatial extent) and subsequently contract, but not disappear, following construction. Use of pipelines as roads would also perpetuate edge effect by maintaining surface disturbance. Any new disturbance effects would incrementally increase an already large habitat fragmentation effect within the Planning Area resulting from existing roads, grazing use, and past oil and gas activities.

Under an initial development scenario (single well pad with an access road), there would be a disturbance of approximately 5 acres of habitat (3 acres per well pad, 1 acres per road, and 1 acres per pipelines).

The noise would be constant for approximately 30 to 90 days of drilling, with indirect disturbance causing the lesser prairie-chicken and other wildlife species to avoid the area (.25 mile radius equal to 126 acres) during the drilling phase. If the well was a non-producer and the site was abandoned and reclaimed, the lesser prairie-chicken and other wildlife species would return to the area depending on the remaining infrastructure. However, as identified earlier re-vegetation of disturbed areas is typically very slow in recovery (BLM 2001).

This development scenario assumes that the well is a producer and has enough potential reserves to progress into a full field development. Full oil field development has a total complement of roads, pads, power lines, gravel sources and pipelines (640 acres 16 well pads-40 acre spacing). The direct disturbance from this full field development would increase to approximately 85 acres (48 acres-well pads, 16 acres-roads, 16 acres-pipelines, 5 acres-gravel pit). The combination of the density of roads, pipelines, power lines, pads, as well as ancillaries on the leasehold, would change the occasional disturbance of the one well scenario into an industrial complex.

Because of the infrastructure, this site would be continuously occupied and a large zone of avoidance (.75 mile radius – 1,183 acres) would develop with most if not all wildlife species avoiding the area.

Based on the RFD (see Appendix 7), an average of 61 wells would be developed on an annual basis, for a total indirect disturbance of 7,686 acres annually. Over the lifetime of this plan (20 years), there would be approximately 153,720 acres indirectly disturbed based on the RFD.

Oil and gas field development would have negative, long-term cumulative impacts to wildlife habitat due to the magnitude and concentration of surface disturbance, such as oil and gas pads, pipelines, access

TABLE 4-3 INDIRECT IMPACTS AND FULL FIELD DEVELOPMENT

ALTERNATIVE	NO. OF WELLS	ACRES INDIRECTLY IMPACTED PER WELL	ACRES OF INDIRECT IMPACT	ACRES INDIRECTLY IMPACTED OVER 20 YEARS	NUMBER OF FULL FIELDS DEVELOPED	ACRES DISTURBED BY FULL FIELD DEVELOPMENT	TOTAL ANNUAL ACRES OF DIRECT DISTURBANCE WITH FULL FIELD DEVELOPMENT	ACRES INDIRECTLY DISTURBED WITH FULL FIELD DEVELOPMENT
No Action	61	126	7,686	153,720	4	85	324	1,183
A	51	126	6,426	128,520	3	85	271	1,183
B	49	126	6,174	123,480	3	85	260	1,183
C	49	126	6,174	123,480	3	85	260	1,183
D	54	126	6,804	136,080	3	85	287	1,183
E	32	126	4,032	80,640	2	85	170	1,183

roads, power lines, and associated human activity in the area. A potential increase in illegal harvest of mule deer, and pronghorn antelope is possible when more human activity is occurring, over the road network, in the general area. Wildlife abundance and diversity would be expected to decrease. These disturbed areas would not be fully reclaimed and portions may remain unsuitable for wildlife for 20 years or more.

Developed oil and gas fields would continue to have long-term negative impacts to wildlife populations and habitat due to the operation and maintenance of producing wells, pipelines, and access roads. Noise associated with non-electric un-muffled pump jacks and compressors would affect mating and nesting activities throughout lesser prairie-chicken habitat. Roads and associated infrastructure that are needed for oil and gas development create fragmentation of habitats and avoidance areas.

Applying the timing stipulation (March 15 through June 15 between the hours of 3:00 am and 9:00 am) on appropriate areas of habitat on public land within the Planning Area would continue to protect lesser prairie-chickens during the spring mating period and brood rearing phase.

Concurrent with timing stipulations, no drilling would be allowed within 200 meters of known lesser prairie-chicken leks. This provides some protection to the booming

ground and adjacent nesting habitat. The pads combined with roads, and possible power lines have significant impacts to wildlife resulting in the creation of areas that lesser prairie-chicken avoid.

Reducing noise from pump jack motors to a maximum of 75 decibels (db) measured 30 feet from the source of the noise would potentially support reestablishment of booming grounds in closer proximity to pump jacks. Females may be able to hear the booming males and potentially increase reproductive success (i.e. more poult groups) as a result of reducing noise levels.

Mesquite control in shinnery oak vegetation community would result in positive impacts on lesser prairie-chicken habitat (approximately 1,000 acres per year for a total of 20,000 acres over the life of the plan). These prescriptions would have short term effects in the form of defoliating shinnery oak but allowing native grasses, forbs and shrubs to reestablish in areas that were once mesquite dominated. Focusing on mesquite control would have positive impacts to the species and its habitats.

Cumulative Effects

Under this alternative surface disturbance and habitat fragmentation would continue unchanged as would activities on public land authorized by BLM. Continuing the status quo would not likely set in place the management prescriptions and mechanism

necessary to avoid listing either the lesser prairie-chicken or the sand dune lizard as threatened or endangered under the Endangered Species Act.

Cultural Resources

This alternative follows the current Roswell Field Office RMP and the Carlsbad RMPA. Impacts (direct, indirect and cumulative) to cultural resources would be the same as those analyzed the Roswell RMP and the Carlsbad Amendment. The chance of impacting cultural resources would increase as surface disturbance increases. The direct impacts of new surface disturbance are shown in Table 4-1.

Paleontological Resources

This alternative follows the current Roswell Field Office RMP and Carlsbad RMP, as amended. Impacts (direct, indirect and cumulative) to paleontological resources would be the same as those analyzed the Roswell RMP and the Carlsbad Amendment. The chance of impacting paleontological resources would increase as surface disturbance increases. The direct impacts of new surface disturbance are shown in Table 4-1.

Recreation

This alternative follows the current Roswell Field Office RMP and Carlsbad RMP, as amended. Impacts (direct, indirect and cumulative) by recreation activities on natural resources would be the same as those analyzed the Carlsbad and Roswell RMPs.

Since current management prescriptions would continue, the recreating public would continue to be visit lesser prairie-chicken habitat. There would be little or no management criteria in place to protect mating areas or to impose stipulations to shield the male boomers during mating rituals. This could bring about negative

impacts to the lesser prairie-chicken habitat and could result in species decline. Lesser prairie-chicken habitat would be left open to potential degradation by the recreating public through setting up blinds, camping, and photography sites in potential lekking areas.

Off-Highway Vehicle Management

Current management plan prescriptions would continue, including:

- Mescalero Sands North Dune OHV Area would be expanded to 1,674 acres.
- Identification of lesser prairie-chicken habitat would not be conducted prior to expansion.
- This would likely pose species decline by the possible intrusion into habitat areas.
- Impacts to lesser prairie-chicken and sand dune lizard habitat might develop.
- The Hackberry Lake Intensive OHV Area would continue to be managed as open to OHV use.
- Designated routes for OHVs transversing to sand dunes would not be identified.

The Roswell Field Office would conduct inventories and conduct transportation planning to identify trails and roads suitable for OHV use. This would reduce surface disturbance and identify OHV routes. Impacts would be less to special species habitat because roads and trails would be managed as limited.

The Carlsbad Field Office would remain open to OHV use. Special Management Areas (SMAs) where archaeological districts are present would be designated as closed to OHV use. Emergency limitations may be imposed in problem areas. Impacts to lesser prairie-chicken and sand dune lizard habitat would continue.

Special Management Areas

Under this alternative, all current designations for areas of critical

environmental concern (ACECs) and SMAs (and their associated management prescriptions) would continue. This includes:

- Mathers Research Natural Area (RNA) (242 acres). Management prescriptions include: closed to future oil and gas leasing; withdrawn from mineral entry; closed to solid mineral leasing; closed to the disposal of mineral materials; designated as a ROW exclusion area; and closed to OHV use.
- Mescalero Sands ACEC – (7,888 acres). Management prescription include: closed to future oil and gas leasing; withdrawn from mineral entry; closed to solid mineral leasing; closed to the disposal of mineral materials; designated as a right-of-way exclusion area. Out of the total area 2,478 acres closed to OHV use, 5,410 acres where OHV use would be limited to designated roads and trails. In addition livestock grazing preference on about 2,483 acres would not be allocated. The Natural National Landmark and Outstanding Natural Area designations would remain in place.
- Bear Grass Draw - 1,780 acres, of which 1,280 acres are within the Planning Area. OHV use is designated as limited to designated routes.
- Laguna Plata Archeological District – (3,360 acres) Management prescriptions include no surface occupancy for oil and gas leases; designated as a right-of-way avoidance area; closed to solid mineral leasing (except for potash); closed to the disposal of mineral materials; out of the total area 1,120 acres are closed to OHV use with 2,240 acres limited to designated routes.
- Maroon Cliffs Archeological District - originally contained 11,783 acres of

public land. The 1997 Carlsbad RMP Amendment increased the size of the district to 17,720 acres of which approximately 4,760 acres are within the Planning Area. Of the acreage in the Planning Area 2,280 acres are closed to future oil and gas leasing and 2,480 acres have the no surface occupancy requirement for oil and gas leases. The entire district is closed to solid mineral leasing and closed to the sale of mineral materials. The entire district is designated as limited to designated routes for OHV use.

- Poco Site – (51 acres and is entirely within the Planning Area). The only management prescription concerns OHV use which is limited to designated routes.

Impacts of establishing and maintaining this ACEC and these SMAs were previously analyzed in the 1988 Carlsbad RMP, the 1997 Carlsbad RMPA, and the 1997 Roswell RMP.

Social and Economic Conditions

Social and economic trends identified in Chapter 3 would continue for the foreseeable future.

Cumulative Effects Summary

The impacts of No Action were documented in the 1988 Carlsbad RMP and the 1997 Proposed Roswell Resource Management Plan/Final Environmental Impact Statement–Proposed Carlsbad Resource Management Plan Amendment/Final Environmental Impact Statement, pages 4-1 through 4-56.

The No Action Alternative does not meet the Purpose and Need for this amendment as described in Chapter 1. Continuing No Action raises the likelihood that either the lesser prairie-chicken or the sand dune lizard could be listed as threatened or endangered species. Such a listing would

probably disrupt some portion of employment and personal income derived from livestock grazing and oil and gas development. If the sand dune lizard is listed the effect would probably be confined to the Planning Area. If the lesser prairie-chicken is listed the effect would probably extend beyond the boundaries of the Planning Area since the species occurs in five states.

ALTERNATIVE A

The following analyzes the impacts of implementing Alternative A, which is the portion of the Conservation Strategy that applies to public land and Federal minerals in the Planning Area.

Lands and Realty

Direct and indirect impacts would be similar to those in the described in the "Impacts Common to All Alternatives" section of this chapter. However, a more active land tenure program would result from prioritizing exchanges with the New Mexico State Land Office. Consolidation of public land would significantly improve management efficiency and effectiveness, reduce management cost, and block up key areas to provide improved protection for resources.

Fluid Minerals

Areas Closed to New Oil and Gas Leasing

The CMA, portions of the Primary Population Area (PPA), occupied habitat in the Sparse and Scattered Population Area (SSPA) and the Isolated Population Area (IPA) would be closed to new oil and gas leasing with certain exceptions (see Chapter 2).

The amount of unleased Federal minerals that would be closed to leasing amounts to

about 18 percent of the total Federal oil and gas mineral estate in the Planning Area (see Table 4-4) or about two percent of the total Federal oil and gas mineral estate in the Pecos District. Lands closed to leasing could be subject to drainage of oil and gas resources from adjacent wells. This could result in the loss of royalties due to the Federal government unless compensatory royalty agreements are arranged or protective wells are drilled.

In State Game Commission owned Prairie-chicken Areas, new leasing of Federal minerals would not be permitted. However, in certain limited situations (pooling, unitization, etc.), leasing with a NSO stipulation may be allowed. This is not a new requirement and would not have any additional impacts on exploration and development in the Planning Area.

New Oil and Gas Leasing With a No Surface Occupancy Requirement

Under certain conditions tracts within the CMA, PPA, and occupied habitat within the SSPA and IPA would be offered for lease with a NSO requirement (see Chapter 2).

Leasing with a NSO stipulation could dissuade bidders from purchasing lease parcels. When applied to permits for drilling, proponents may have to relocate drilling projects, thereby increasing construction costs the project. Some lands may have to be developed through directional well drilling. Of the proposed lands open to oil and gas leasing with the NSO stipulation, all are in areas of high or moderate hydrocarbon potential. Some leases on these lands with the NSO stipulation could also be subject to drainage of hydrocarbons by nonfederal wells. In this situation, the lessee would not be responsible for payment of lost royalties unless an economic directional well can be drilled.

TABLE 4-4 ALTERNATIVE A ACREAGE					
Management Category	Acres Leased for Oil and Gas	Unleased Acres	Total Acres of Federal Minerals	Comparison of Leased Acreage to Total Federal Acreage in the Planning Area	Comparison of Total Unleased Acres to Total Federal Acreage in the Planning Area
CMA	40,180	115,949	156,129	4%	10%
PPA	105,641	93,157	198,798	9%	8%
SSPA	81,572	64,130	145,702	7%	6%
IPA	597,953	46,741	644,694	52%	7%
Total	825,346	319,977	1,145,323	72%	28%

When the notice of a competitive sale of oil and gas leases clearly provides that a lease would be subject to a NSO stipulation, by making a bid for the indicated parcel the bidder is bound to accept the stipulation. Lessees would be advised that issuance of a lease in the Planning Area with the NSO stipulation does not guarantee that a suitable surface location would be available for drilling or that the lease would be developed. Prospective lessees should take this into consideration prior to obtaining a lease with the NSO stipulation. If a lessee acquires a lease with an NSO stipulation attached, then it would be the responsibility of the lessee to locate a suitable surface location that does not adversely impact lesser prairie-chicken habitat or sand dune lizard habitat. The lessee would be responsible for demonstrating, through the use and application of peer-reviewed science, that development of the lease would not adversely impact the habitat of either species.

The immediate and long-term effects of NSO restrictions could include lost production opportunities, increased drilling and production costs, and loss of royalties.

New Oil and Gas Leasing

New leasing in suitable habitat within the PPA would be allowed if, by annual recalculation, there is demonstrated a net increase in the sum of suitable and occupied habitat. New leasing in occupied habitat would be allowed if the criterion for suitable habitat is met, and there is a statistically significant lesser prairie-chicken

population increase Statewide over the previous five years. This provision would have minimal impact on the exploration and development of mineral resources in the Planning Area. The limitations on exploration and development of resources may result in a loss of revenue and royalties, but amount of acreage involved is only 8 percent of the Federal minerals in the Planning Area and 5 percent of the total lands available in the Planning Area (see Table 4-4).

Those areas in the PPA designated as unsuitable habitat are open for new leasing with no new or additional restrictions. Most, but not all areas in the PPA designated as potentially suitable habitat are open for new leasing. These areas may be closed to new leasing; or stipulated in certain instances, where development in unsuitable or potentially suitable habitat would extend an impact/avoidance zone into suitable habitat. These are standard operating procedures and have no additional impact.

Development of Existing Oil and Gas Leases

There are existing oil and gas leases in areas that would be closed for new leasing within the CMA, PPA, SSPA and IPA. Development of resources covered by these leases would continue under the terms of the lease and appropriate conditions of approval in this area.

Plans of Development (PODs) and Conditions of Approval (COAs) would be used to guide orderly development on

existing Federal leases in potential, suitable, or occupied habitat in the CMA and PPA. PODs and COAs would be required only on a case by case basis in the SSPA and IPA.

PODs and COAs would ensure orderly development and minimize surface impact in lesser prairie-chicken habitat. Included in PODs and COAs would be specifications for various strategies for minimizing impacts associated with new development, and for reclaiming developed areas. Use of PODs for orderly development began with implementation of Interim Management and therefore would have minimal additional impact.

Abandoned well pads and the caliche roads that serve these wells would be cleaned of caliche, raked, contoured, and reclaimed.

All out-of-service roads in occupied and suitable sand dune lizard habitat would be reclaimed and closed to vehicle use, pending consultation with grazing permittees. Abandoned well pads and out-of-service roads would not be reseeded in dune areas. These actions may result in increased initial costs. The long-term benefits would bring cost-savings to operators in reclamation, and provide benefits to wildlife habitat.

Oil and gas wells and storage facilities would include safety measures to ensure operations that minimize the potential for habitat pollution in the form of oil leaks or spills. Such measures would include, but not be limited to, replacement of worn or out-of-date materials and equipment, construction of spill containment structures, removal of contaminated materials, and protection of well sites. These are standard operating procedures and have no additional impact.

Cumulative Effects

Based on the calculations in Appendix 7 over the past 30 years, an average of 337 wells per year were drilled on Federal

minerals within the Pecos District. During that same period, an average of 27 Federal wells were plugged and abandoned. Approximately 18 percent of the activity within the Pecos District occurs within the Planning Area. Using that percentage, approximately 61 wells per year were drilled within the Planning Area, (10 within Roswell Field Office and 51 within Carlsbad Field Office). On average five wells per year were plugged and abandoned on Federal lands in the Planning Area, one within Roswell Field Office and four within Carlsbad Field Office. Eleven total wells were plugged in the Planning Area.

The use of Controlled Surface Use (CSU) or No Surface Occupancy (NSO) stipulations in unleased areas would also have a greater impact under this alternative than under current management because pre-existing rights of development do not exist. However, the impacts of no new leasing and applying CSU or NSO stipulations would be minimal given the small acreage amount proposed. The amount of acreage proposed to be closed or stipulated is only 10 percent of the Federal lands in the Planning Area and 5 percent of the total lands in the Planning Area. In addition, a large portion of the lands in the CMA are not within known oil and gas fields or developed fields. Given these conditions, impacts of this portion of Alternative A would not be significant.

This alternative would reduce the number of new well pads and minimize the size of the pad in occupied or suitable sand dune lizard habitat. Opportunities to drill multiple wells from one pad would take precedence. While drilling multiple wells from one location may reduce facility costs, it may not offset the costs associated with directional drilling.

Based on the RFD and the management prescriptions of this alternative, approximately 51 wells would be drilled per year and 11 wells per year would be plugged and abandoned. Initial surface disturbance would be a total of

approximately 255 acres of which approximately 117 acres would reclaim and stabilize by the end of three years. Successful reclamation of the plugged and abandoned wells would total approximately 18 acres.

Over the next 20 years, a total of 1,020 wells would be drilled in the Planning Area and approximately 220 wells would be plugged and abandoned. During that period, approximately 5,100 acres of surface would be disturbed; 2,346 acres would reclaim and stabilize within 3 years of initial disturbance and approximately 360 acres would be reclaimed from plugged and abandoned wells.

The long-term effects of no new leasing could include lost production opportunities, lost royalties and lost job opportunities. Under this alternative, 10 fewer wells would be drilled per year than the No Action alternative. Given the history of production in this region, 8 of those 10 wells would likely be producing wells. Over 20 years, this alternative may result in the loss of 160 producing wells in the region.

Alternative Energy

Under this alternative, applications for wind and solar generating sites would be considered on a case by case basis. Impacts would be similar to those described under the No Action Alternative.

Soils

Impacts to soils would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically, impacts to soils are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to soil resources is OHV use. Direct impacts to soils by OHV use would be confined to designated OHV

recreation areas and existing roads and trails within the Planning Area.

Water Resources

Impacts to water resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically impacts to water resources are indirectly related to surface disturbance.

The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to water resources is OHV use. Direct impacts to air quality by OHV use would be confined to designated OHV recreation areas and trails and existing trails and roads within the Planning Area. Impacts would be less those described under the No Action Alternative.

Floodplains

Impacts to floodplain resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically impacts to floodplain resources are indirectly related to surface disturbance. However surface disturbance would not be allowed within up to 200 meters of the outer edge of 100-year floodplains, to protect the integrity of those floodplains.

Air Quality

Impacts to air quality would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically impacts to air quality are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to air quality resources is OHV use. Direct impacts to air quality by OHV use would be confined to designated OHV recreation areas and trails and existing trails and roads within the Planning Area.

Impacts would be less those described under the No Action Alternative.

Vegetation

The treatments prescribed under this alternative to reduce mesquite and shinnery oak to meet composition/canopy standards would reduce competition with more desirable vegetation for water. This would have positive impacts similar to those described in the No Action Alternative. The focus of these treatments would be within the Planning Area. This would allow more acres to be treated in the Planning Area, so the benefits could be realized sooner than under the No Action Alternative. Should funding levels hold consistent for the life of the plan, as many as 640,000 acres could be treated for brush control. Assuming that 3 years are funded at current levels, with the remaining years funded at normal levels, then approximately 140,000 acres could be treated for brush control.

In addition, the 5-year wait before adjoining pastures are treated in the Roswell Field Office would be dropped. This would allow greater management flexibility to treat adjoining pastures in one project, saving time in the implementation schedule while reducing overall costs.

As described in the Minerals section above, over the 20-year life of the plan, 5,100 acres of vegetation would be disturbed due to construction, 2,346 acres would be reclaimed and stabilized during initial rehabilitation, and 360 acres would be recovered as plugged and abandoned wells are reclaimed. This leaves 2,394 acres of vegetative disturbance.

Cumulative Effects

Changes in vegetation would be most prone to amount and timing of precipitation, but localized areas could see improvement in cover/composition due to livestock management prescriptions and vegetation treatment (brush control) projects. Within

the Planning Area, the increased focus on limiting surface disturbance, more brush control, and changes in livestock management prescriptions would result in meeting Desired Plant Community (DPC) goals sooner than under the No Action Alternative.

Within the Planning Area, changing the designation of the Carlsbad Field Office portion from open to OHV use to limited to existing roads and trails would reduce the impacts to vegetation. The reduction would be difficult to quantify due to the lack of base-line data. Impacts in the Roswell Field Office portion would be the same as those analyzed in the 1997 Roswell RMP.

Livestock Management

Livestock grazing would be maintained at a level consistent with the seasonal nesting and brood-rearing habitat requirements of the lesser prairie-chicken. Ranch operators voluntarily participating in a conservation program would agree to try to meet these standards through the adoption of a suitable grazing program for their land or lease allotment. Such a program may involve an overall reduction in AUMs or acreage grazed, modification of fences and water sources, brush control, implementation of a more conservative, deferred or rotational grazing system that rests breeding areas in key seasons to ensure adequate residual grass cover for nesting, and other related changes in management.

Under this alternative, the focus on livestock management to enhance special status species habitat would be on livestock management techniques first and reductions second. Techniques such as pasture rest to provide suitable nesting and brood-rearing habitat to be maintained, modification of fences and water sources, and brush control would be employed first. If these were not successful, then reductions in grazing use would occur to protect or enhance habitat. The potential

for AUM reductions is discussed in the No Action Alternative above.

Grazing would be deferred for at least two growing seasons after any vegetation treatment. Grazing after that time would be allowed only if progress towards meeting vegetative standards is being made. Longer periods of rest may be required in some cases, especially during drought conditions.

These measures would result in a negative economic impact to ranching operations, due to fewer calves produced for market, additional costs to move livestock from pasture to pasture, renting additional private pasture to support the herd while they could not graze on public land, and increased maintenance costs on range improvement projects necessary to meet habitat requirements. These short term negative impacts would be reduced or eliminated if programs such as EQIP are utilized to offset these losses.

Cumulative Effects

See the discussion in the Impacts Common to All Alternatives section. Reductions in livestock numbers or changes in season of use would negatively impact grazing operators, which would impact local businesses as grazing operators would have less disposable income to spend at these businesses. This is not expected to be significant, since many are already voluntarily reducing due to drought. This impact is expected to be localized to certain allotments or pastures, not Planning Area wide. The impact may also be offset by incentive programs, brush control, or improved efficiency due to additional range improvement projects and grazing schemes.

Wildlife including Special Status Species

Alternative A provides a greater opportunity to protect and improve wildlife habitat than

does the No Action Alternative. This alternative provides management strategies that were developed by a strong consensus building exercise and allows management flexibility for habitat and species recovery.

Land exchanges with the New Mexico State Land Office for lands identified within the CMA would provide a positive impact to these areas by blocking up Federal lands and minerals and avoiding fragmentation. Up to approximately 22,000 acres of State Trust lands within the CMA could possibly be acquired by BLM.

Impacts on lesser prairie-chicken habitat by electric power lines would be the same as the No Action Alternative.

Within this alternative there are four different classifications for habitats associated with lesser prairie-chicken. They are as follows:

Core Management Area (CMA), Primary Population Area (PPA), Sparse and Scattered Population Area (SSPA), and the Isolated Population Area (IPA). Table 4-4 summarizes Federal Mineral acres within these four geographic areas.

Within the CMA and PPA Plans of Development (PODs) are required on existing leases. In the SSPA and the IPA, PODs would be utilized on a case-by-case basis where appropriate. Requiring PODs for existing leases, when requested, within these habitat areas would reduce surface disturbing impacts and habitat fragmentation by controlling when and where those impacts would occur.

The CMA contains 115,949 acres of Federal minerals not currently under lease. Where appropriate, new leasing with a NSO requirement within the perimeter of the CMA would be considered to reduce impacts to these habitats while allowing the orderly development of petroleum resources. Closing the remainder of the CMA to new oil

and gas leasing would protect currently occupied lesser prairie-chicken and sand dune lizard habitat.

The PPA contains 93,157 acres of Federal minerals not currently under lease. Closing occupied, suitable and portions of potentially suitable habitat (including the State Prairie-chicken Areas) within the PPA to new Federal oil and gas leasing would protect currently occupied lesser prairie-chicken and sand dune lizard habitat. In certain circumstances, an NSO requirement may be applied to new oil and gas leasing within these habitats. This approach would aid in minimizing surface impacts, avoid habitat fragmentation, and protect active leks. Activities in unsuitable habitat would be conducted in a manner to avoid impacts to adjoining occupied and suitable habitats. Using this approach for oil and gas leasing in unsuitable habitat would result in minimal impacts on lesser prairie-chicken and sand dune lizard habitat.

New oil and gas leasing in occupied and suitable habitat within the PPA, would be based on the annual recalculation formula. The status of the population should be maintained or increased; however, no gain in suitable habitat would likely occur within the PPA.

Within the SSPA, an NSO requirement may be applied to new oil and gas leasing when occupied habitats (within 1.5 miles of active leks) would be impacted. Closing the SSPA to new oil and gas leasing within currently occupied lesser prairie-chicken habitat would protect these areas where NSO is not a viable option. This approach would aid in minimizing surface impacts, avoid habitat fragmentation, and protect active leks.

Within the IPA, an NSO requirement may be applied to new oil and gas leasing when occupied habitats (within 1.5 miles of

active leks) would be impacted. Closing the IPA to new oil and gas leasing within currently occupied lesser prairie-chicken habitat would protect these areas where NSO is not a viable option. This approach would aid in minimizing surface impacts, avoid habitat fragmentation, and protect active leks.

Within the IPA, 17 Habitat Evaluation Areas were established. (See Map A-1 and Chapter 2) An assessment of these 17 areas for lesser prairie-chicken habitat suitability would be conducted. Depending upon the outcome of this analysis some areas may be closed to new leasing and used as building blocks for future populations. Habitat Evaluation Areas meeting the criteria outlined in Appendix 8 may also be used as relocation sites and for future research needs. Areas not meeting the criteria may be leased and developed at different levels based upon the proximity to other blocks, and the presence of occupied and suitable sand dune lizard habitat. Table 4-5 lists the 17 Habitat Evaluation Areas and acreage.

Based on a 20-year projection, construction of well pads, roads, and pipeline operations would have direct effects on 5,100 acres of habitat (255 acres per year avg.) within the Planning Area (See Table 4-6).

Construction activities would use heavy equipment for leveling pads and roads, trenching and backfilling pipeline corridors and building electrical power lines (BLM 2001). Specific effects of this disturbance would include: soil churning, compaction, and loss of top soil; loss of vegetation cover, specific habitat features such as large shrubs, and species composition; and alteration of surface water flow, increased erosion, and increased likelihood of exotic plant species establishment (ibid).

TABLE 4-5 HABITAT EVALUATION ACREAGE		
UNIT #	HEA NAME	ACRES
1	QP-A	7,,595
2	QP-B	598
3	QP-C	3,097
4	QP-D	1,972
5	QP-F	2,909
6	BILBREY	5,328
7	EUNICE	7,661
8	LAGUNA	3,289
9	LOCO HILLS	8,839
10	MESCALERO SANDS	9,347
11	MILLS	2,585
12	PADUCA	15,167
13	PEARL	3,234
14	SAN SIMON	10,702
15	SKEEN	2,939
16	SOUTHPAW	3,054
17	WIPP	24,738
	Total Acres	113,053

TABLE 4-6 ALTERNATIVE A 20-YEAR PROJECTION (DIRECT IMPACTS) FOR OIL AND GAS DEVELOPMENT			
TYPE OF ACTION	NUMBER OF ACTIONS ON FEDERAL LAND	APPROXIMATE TOTAL ACRES DISTURBED	
		SHORT TERM (3-YEARS)	LONG TERM
Oil and Gas development wells	1,020	2,806	3,294

These activities would cause direct disturbance and/or displacement of ground dwelling animals, disturbance and loss of habitat structures such as shrubs with nests, habitat loss through erosion, and changes in food and cover relationships due to vegetative change and increased erosion (BLM 2001). Animal species composition and densities could change within and adjacent to any mineral development activity (ibid). Changes in the animal community and habitat structure change in plant species composition and density would persist until habitat within the

development areas is restored to near pre-disturbance conditions (ibid). However, re-vegetation of disturbed sites is typically very slow (ibid).

For a discussion of indirect impacts, refer to the No Action Alternative and Table 4-3.

Based on the RFD (see Appendix 7), it assumes that there would be 51 wells (approximately 3 full field developments) developed on an annual basis, for a total indirect disturbance of 6,426 acres annually. Over the lifetime of this plan (20-Year) there would be approximately 128,520 acres indirectly disturbed based on the RFD.

Based on the prescriptions in the geographic areas discussed above, the direct impacts to 5,100 acres (255 acres per year avg.) and the indirect impacts of 128,520 acres (6,426 acres per year) would occur exterior the CMA, occupied and suitable habitat within the PPA, occupied habitat within the SSPA, and the 17 Habitat Evaluation Areas within the IPA. Therefore, the impacts from the 51 wells would have minimal impacts to lesser prairie-chicken habitat.

Applying the timing stipulation (March 15 through June 15 between the hours of 3:00 am and 9:00 am) on appropriate areas of habitat on public land within the Planning Area would continue to protect lesser prairie-chickens during the spring mating period and brood rearing phase. In all four planning regions timing and noise stipulations, would be maintained as needed. Stipulations should be imposed only in areas where lesser prairie-chicken are present, as indicated by sightings or survey reports within a period of 2 years. In the case that lesser prairie-chicken reoccupy an area the timing and noise stipulation should be reinstated.

Concurrent with timing stipulations, no drilling would be allowed within 200 meters of known lesser prairie-chicken leks. This provides some protection to the booming

ground or adjacent nesting habitat. The pads combined with roads, and possible power lines have significant impacts to wildlife resulting in the creation of areas that lesser prairie-chicken avoid.

Reducing noise from pump jack motors to a maximum of 75 decibels (db) measured 30 feet from the source of the noise would potentially support reestablishment of booming grounds in closer proximity to pump jacks. Females may be able to hear the booming males and potentially increase reproductive success (i.e. more poult groups) as a result of reducing noise levels.

New oil/gas well pads would not be placed in dune areas within occupied or suitable habitat, or within 100 meters of such dune areas. Well sites proposed in these areas would be moved to adjacent shinnery oak flats. Where a dune complex that contains occupied or suitable habitat is large and well pads cannot be placed exterior to the complex, new well pads should be located at the periphery of the complex, avoiding the center of the complex.

Locating well pads exterior to the dune areas would provide protection to the sand dune lizard habitat. Maintaining well densities less than or equal to 13 well pads per square mile in the shinnery oak flats between dune complexes would reduce potential impacts to dispersal corridors.

Mesquite control in shinnery oak vegetation community would result in positive impacts on lesser prairie-chicken habitat (approximately 2,000 acres per year for a total of 40,000 acres over the life of the plan). This would be a 100 percent increase over the existing No Action Alternative. These prescriptions would have short-term effects in the form of defoliating shinnery oak but not killing it which would allow native grasses, forbs and shrubs to reestablish in areas that were once mesquite dominated. Focusing in the Planning Area for mesquite control would

have positive impacts to the species and its habitats.

Shinnery oak treatments would not focus on the elimination of shinnery oak, but would focus on defoliating the shinnery oak and releasing herbaceous species that are conducive for lesser prairie-chicken. The treatments would set back the growth of shinnery oak and defoliate the plant but would not kill it. While shinnery oak treatment is a last resort for vegetation management, a 500 meter buffer around occupied and suitable sand dune lizard habitat would be applied. This would protect sand dune lizard habitat while improving vegetative composition beneficial to lesser prairie-chicken habitat.

Impacts associated with OHV would be decreased under this alternative compared to the No Action Alternative since routes would be limited to existing roads and trails.

Monitoring and research is an important component of this alternative in determining habitat condition, distribution, impacts, and successful reclamation.

Cumulative Effects

This alternative would provide more habitat protection for both lesser prairie-chicken and sand dune lizard habitat by closing areas to new oil and gas leasing than occurs in the No Action Alternative. It is important to note specific measures taken to protect chicken habitat would benefit lizard habitat where their habitats coincide.

Fragmentation is one of the issues that create habitat connectivity issues. Roads, power lines and infrastructure associated with the oil field are all fragmentary in nature; with the reclamation effort over the life of the plan connectivity of habitat can occur between habitat patches expanding the available habitat for sensitive species. By removing roads down to native soils, removing unused power lines, pads down to native soils and any other infrastructure,

coupled with proper seeding of native species in potential lesser prairie-chicken habitats, the avoidance areas would be decreased and the habitat expanded for potential occupancy.

Strategic planning of reclamation in lesser prairie-chicken and sand dune lizard habitats would have a beneficial impact to the habitat used by both species. Even though 2,346 acres per year of reclamation does not appear to be a lot, connectivity is the issue. If reclamation would take place in habitats that were once occupied by the lesser prairie-chicken and currently occupied by sand dune lizard, connectivity would increase on an average of 86,000 acres, respectively, over the life of this plan amendment.

Cultural Resources

Impacts to cultural resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically, impacts to cultural resources are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1

Paleontological Resources

Impacts to paleontological resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically, impacts to paleontological resources are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

Recreation

Impacts would be the same as those described in the No Action Alternative.

Off-Highway Vehicle Management

The management prescriptions of this alternative are based on the Conservation Strategy. See Appendix 2, page 79 for the discussion of OHV management. The strategy calls for the possible closure of roads to protect lesser-chicken habitat in order to avoid surface disturbance within 1.5 miles of leks and minimize noise during the mating season.

Pending the completion of route designation plans, OHV would be limited to existing roads and trails within the Planning Area. This management action would align the Carlsbad portion of the Planning Area with the current Roswell management prescription in the area. This management action would bring the Planning Area into compliance with current BLM planning guidance concerning OHV use.

Given the assumption that OHV recreation use would continue to increase over time, visitor use of established OHV areas (Mescalero Sands North Dune and Hackberry Lake) would eventually spill over onto public land adjacent to these area. This could lead to unwanted impacts to lesser prairie-chicken and sand dune lizard habitats.

Seasonal noise restrictions (no OHV activity between 3:00 am and 9:00 am) in the established OHV areas would contribute to noise abatement during mating season. Interpretive signs and displays placed at Mescalero Sands North Dune and Hackberry Lake OHV Areas would serve as educational focal points for lesser prairie-chicken and sand dune lizard habitat protections.

Cumulative Effects

OHV use of what is now the Mescalero Sands North Dune OHV Area dates from the late 1940s with the availability of four-

wheel drive vehicles. Use in the Area was boosted in the late 1960s with popularity of Volkswagen-base dune buggies. BLM established the Area for OHV use in 1989.

Currently, the public is using the Square Lake region for OHV recreation use.

Implementation of this alternative would contribute to reduced impacts on the habitat for special status species as compared to the No Action Alternative. The future designation of roads and trails, including the closure and reclamation of some, would result in less surface disturbance. With increased visitor use foreseen in the existing OHV areas, however, there is a possibility that OHV use outside these areas would occur and would lead to degradation of special status species habitat.

Special Management Areas

Impacts would be the same as those described in the No Action Alternative.

Social and Economic Conditions

Implementing the 2001 New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing in the Planning Area would produce the same social and economic impacts as described in its environmental impact statement. As described in this EIS the livestock industry in the four county area (Chaves, Eddy, Lea and Roosevelt) would notice little, if any impact under this alternative.

Since the development of existing oil and gas leases would continue, revenues, employment and income generated by this activity would continue at or close to current levels for the foreseeable future. Costs associated with the development requirements (plans of development, designing road networks, reclamation) would be born by the lease holder under these alternatives. More intensive development planning, however, could lead

to reduced developed costs and lower overall development costs. Larger factors such as market prices would have more impact on the economic viability leases and wells than the development prescriptions of this alternative.

Offering new oil and gas leases by the BLM within the Planning Area has no direct connection to employment or income levels in the local economy. Evidence of this disconnection can be seen in Table 3-9 and Table 3-12 of Chapter 3. In the mid-1980s, employment in the oil and gas industry as well as personal income from this industry plummeted. The decline was due to market prices, not the availability of Federal minerals for lease.

Increasing new oil and gas leasing by the BLM in the Planning Area would not produce much economic benefit. Tracts not under lease prior to 1997 were unleased due to the lack of interest, in some cases, and no evidence of payable petroleum zones. Additionally, some existing oil and gas leases remain undeveloped. (See Map 2-1 and Map 2-2.) The Core Management Area of this alternative contains a large number of dry holes completed to depths ranging from 3,000 feet deep to 10,000 feet deep. If there are economic quantities of oil and gas beneath the Core Management Area, current technology has been unable to locate and extract these resources.

While still an important component of the local economy employment in both the agriculture and petroleum fields has decreased in relation to total employment over the past 30 years. Personal income derived from agriculture has declined while personal income from jobs in the oil and gas industry has increased. The No Action Alternative and this alternative would be unlikely to affect this trend.

Changes in economic conditions such as employment and personal income are reflected in society as a whole. Large scale

changes in these conditions would be more easily documented than smaller changes. In this analysis, the four-county area possesses a somewhat diverse employment index, 737 versus a median of 961 for all counties in the U.S. (See Chapter 3) Therefore, the local economy is better able to absorb small changes such as are anticipated under this alternative.

The per capita income in the four counties trails both the New Mexico and national averages. The average earnings per job in the four counties is slightly less than the New Mexico average and substantially less than the national average. Since 71 percent of the new jobs created in the area were in the Services & Professional category (see Chapter 3), this difference cannot be tied to dependence on public land and resources.

It is more difficult to quantitatively measure social impacts. In the social context of the communities in the four counties, changes would likely be minor and relatively unnoticed under this alternative. However, individuals and families with interests in either livestock or oil and gas would be affected in particular localities. For these individuals and families, the most noticeable impact would likely be reduced personal income, reduced operational flexibility and an increase in personal stress through increased operational restrictions.

Cumulative Effects Summary

The impacts to specific elements have been documented previously in this chapter. Taken as a whole, the cumulative effects of this alternative include:

- This alternative provides more habitat protection for both the lesser prairie-chicken and the sand dune lizard than the No Action Alternative by closing areas to new leasing. It is important to note specific measures taken to protect chicken habitat also benefits lizard habitat where their habitats coincide.

- Given the relative economic diversity of the four counties surrounding the Planning Area, economic effects would be readily absorbed by the local economy and would not be noticeable to the general population. Individuals and companies would be directly affected.
- Long-term impacts of implementing Standards for Rangeland Health would be a positive benefit to livestock operators. The short term impacts would be expected to be localized to certain allotments or pastures and would not occur throughout the Planning Area.
- The likelihood of listing the lesser prairie-chicken would be reduced from the No Action Alternative, however, the management prescriptions protecting sand dune lizard habitat are essentially the same as No Action. Therefore, Alternative A does not meet the Purpose and Need for this amendment as described in Chapter 1.

ALTERNATIVE B (PREFERRED ALTERNATIVE)

The following analyzes the impacts of implementing Alternative B, which adopts the concepts of the Conservation Strategy in Alternative A and adds measures designed to provide greater protection of lesser prairie-chicken and sand dune lizard habitat.

Lands and Realty

The Impacts would generally be the same as those described in Alternative A. The power line removal credit (PLRC) program would not entail additional costs to applicants and/or operators since the removal of idle lines and poles is part of maintenance programs. If, however, an applicant or operator chooses to bury power lines, there would be additional impacts to ROW development from increased initial

development costs. Additional development costs would ensue for applicants or operators who choose to construct new power lines and avoid occupied lesser prairie-chicken habitat.

Fluid Minerals

Impacts to mineral resources would be the same as Alternative A, with the following differences:

Areas Closed to New Oil and Gas Leasing

This alternative calls for the expansion of the CMA. This would result in the closure of about 19 percent of the Federal mineral estate within the Planning Area (see Table 4-7) and about 2 percent of the Federal mineral estate within the Pecos District.

New Oil and Gas Leasing With a No Surface Occupancy Requirement

Applying the NSO requirement to dune complexes within sand dune lizard habitat would not total a significant amount of acres since most of the unleased Federal estate is in either the CMA or occupied lesser prairie-chicken habitat and, therefore, closed to new oil and gas leasing.

New Oil and Gas Leasing

Impacts to mineral resources would be the similar to those of Alternative A. BLM, however, would consider new leasing in occupied lesser prairie-chicken habitat within the PPA when the lesser prairie-chicken is no longer a candidate for listing as a threatened or endangered species. This would result in fewer tracts of Federal minerals available for new leasing.

BLM would consider new leasing in suitable habitat within the Primary Population Area when there is a calculated two to one ratio of restored acres to disturbed acres within the PPA and inter-agency coordination with the US Fish and Wildlife Service is

conducted. The calculation would be conducted using satellite imagery at five-year increments from the approval of this resource management plan amendment. In addition to meeting the two to one ratio, other considerations factoring into a decision for new leasing include, but are not limited to, the site characteristics of a tract nominated for leasing such as its proximity to occupied habitat, surface ownership, and the density of existing infrastructure. This would result in fewer tracts of Federal minerals available for leasing.

Development of Existing Oil and Gas Leases

The requirement for conducting surveys prior to developing existing leases in sand dune lizard habitat would add planning time and costs to development. On the other hand, prior planning and short-term expense may yield more efficient development with a reduction in costs over the long-term.

Cumulative Effects

Based on the calculations in Appendix 7 over the past 30 years, an average of 337 wells per year were drilled on Federal minerals within the Pecos District. During that same period, an average of 27 Federal wells were plugged and abandoned. Approximately 18 percent of the activity within the Pecos District occurs within the Planning Area. Using that percentage, approximately 61 wells per year were drilled within the Planning Area, (10 within Roswell Field Office and 51 within Carlsbad Field Office). On average five wells per year were plugged and abandoned on Federal lands in the Planning Area, one within Roswell Field Office and four within Carlsbad Field Office. Eleven total wells were plugged in the Planning Area.

Based on the RFD and the management prescriptions of this alternative, approximately 49 wells would be drilled per year and 11 wells per year would be

TABLE 4-7 ALTERNATIVE B ACREAGE

MANAGEMENT CATEGORY	ACRES LEASED FOR OIL AND GAS	UNLEASED ACRES	TOTAL ACRES OF FEDERAL MINERALS	COMPARISON OF LEASED ACREAGE TO TOTAL FEDERAL ACREAGE IN THE PLANNING AREA	COMPARISON OF TOTAL UNLEASED ACRES TO TOTAL FEDERAL ACREAGE IN THE PLANNING AREA
CMA	43,338	128,299	171,637	4%	11%
PPA	105,641	93,157	198,798	9%	8%
SSPA	78,414	51,780	130,194	7%	5%
IPA	597,953	46,741	644,694	52%	4%
Total	825,346	319,977	1,145,323	72%	28%

plugged and abandoned. Initial surface disturbance would be a total of approximately 245 acres of which approximately 113 acres would reclaim and stabilize by the end of 3 years. Successful reclamation of the plugged and abandoned wells would total approximately 18 acres.

Over the next 20 years, approximately 980 wells would be drilled in the Planning Area and approximately 220 wells would be plugged and abandoned. During that period approximately 4,900 acres of surface would be disturbed; 2,254 acres would reclaim and stabilize within one year of initial disturbance and approximately 360 acres would be reclaimed from plugged and abandoned wells.

Under this alternative, 12 fewer wells would be drilled per year than the No Action Alternative. Given the history of production in this region, 10 of those 12 wells would likely be producing wells. Over 20 years, this alternative may result in the loss of 200 producing wells in the region.

Alternative Energy

Under this alternative wind and solar generation sites would be confined to areas that would have no negative impacts to occupied or suitable lesser prairie-chicken and sand dune lizard habitat.

The impacts to vegetation and wildlife by the construction and operation of wind energy sites have been analyzed in the 2005 Wind Energy Programmatic

Environmental Impact Statement. These impacts are described in Chapter 5 of this document on pages 5-37 through 5-75. The EIS is available on-line at www.windeis.anl.gov.

Soils

Impacts to soils would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically, impacts to soils are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to soils is OHV use. Direct impacts to air quality by OHV use would be confined to designated OHV recreation areas and trails and existing trails and roads within the Planning Area. Impacts would be less those described under the No Action Alternative.

Water Resources

Impacts to water resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically, impacts to water resources are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to water quality resources is OHV use. Direct impacts to air quality by OHV use would be confined to designated OHV recreation areas and trails and

existing trails and roads within the Planning Area. Impacts would be less those described under the No Action Alternative.

Floodplains

Impacts to floodplain resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically impacts to floodplain resources are indirectly related to surface disturbance. However surface disturbance would not be allowed within up to 200 meters of the outer edge of 100-year floodplains, to protect the integrity of those floodplains.

Air Quality

Impacts to air quality would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter.

Specifically, impacts to air quality are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to air quality resources is OHV use. Direct impacts to air quality by OHV use would be confined to designated OHV recreation areas and trails and existing trails and roads within the Planning Area. Impacts would be less those described under the No Action Alternative.

Vegetation

The impacts would be similar to Alternative A, but would allow more treatments to be completed in a shorter time frame.

As described in the Minerals section above, over the 20 year life of the plan, 4,900 acres of vegetation would be disturbed due to construction, 2,254 acres would be reclaimed and stabilized during initial rehabilitation, and 360 acres would be recovered as plugged and abandoned wells

are reclaimed. This leaves 2,286 acres of vegetative disturbance.

Cumulative Effects

Impacts would be similar to Alternative A; but emphasis on habitat rehabilitation would be a positive impact, as previously disturbed areas are successfully recovered. Additional vegetative cover would improve watershed function, increase infiltration, reduce runoff, and allow more precipitation to be available for vegetative growth.

Within the Planning Area, changing the designation of the Carlsbad Field Office portion from open to OHV use to limited to existing roads and trails would reduce the impacts to vegetation. The reduction would be difficult to quantify due to the lack of base-line data. Impacts in the Roswell Field Office portion would be the same as those analyzed in the 1997 Roswell RMP.

Expanding the Mescalero Sands North Dune OHV Area and establishing the Square Lake OHV would have little or no impacts on vegetation. This because the areas that would be designated as open to OHV use are open dunes, with very few plants growing on them. Travel between the dunes in Square Lake would be limited to designated roads and trails, further limiting impacts to vegetation.

Livestock Management

Impact to livestock grazing management would be similar to Alternative A. Any necessary adjustments, increases or decreases, would be made based on monitoring data and through consultation, as discussed in 43 CFR 4100.

Cumulative Effects

Impacts would be the same as those described in Alternative A.

TABLE 4-8 ALTERNATIVE B 20-YEAR PROJECTION (DIRECT IMPACTS) FOR OIL AND GAS DEVELOPMENT			
Type of Action	Number of Actions on Federal Land	Approximate Total Acres Disturbed	
		Short Term (3-Years)	Long Term
Oil & gas development wells	980	2,254	2,646

Wildlife including Special Status Species

Under alternative B, impacts to wildlife habitat would be the same as Alternative A, with the following differences:

The expansion of the CMA (by approximately 18,000 acres of Federal minerals) is a positive impact to protect habitat for both the lesser prairie-chicken and sand dune lizard since the CMA would be closed to new oil and gas leasing.

In the long term, the power line removal credit (PLRC) program would result in reduction in the amount of power lines in the Planning Area. This would be a positive impact on lesser prairie-chicken habitat by producing a net gain in habitat through reduction in the amount of avoidance area. The PLRC program also would prioritize habitat and participants would gain credit by removing idle lines in high priority areas. See Appendix 6 for details.

Burying power lines would result in greater habitat benefits than the PLRC program but the costs associated with burying power lines, the technical problems associated with burying higher voltage power lines, and lack of necessary construction equipment mitigate against wide-spread participation.

The use of muffled engines to power equipment at wells presents no new or additional impacts to lesser prairie-chicken

habitat. Constructing power lines to avoid occupied and suitable habitat may not result in a net reduction of impacts across the Planning Area and, instead, may increase the amount of power lines within the Planning Area.

Constructing new power lines parallel to existing lines would limit the amount of new power lines but would not promote the possibility of expansion of habitat or population. Confining all infrastructure (roads, power lines and pipelines) to the same corridor would reduce impacts associated with individual locations for these surface disturbances but would not provide opportunities for habitat or population expansion.

New oil and gas leasing in occupied habitat within the PPA would not be based on the annual recalculation formula. BLM, however, would consider new leasing in occupied lesser prairie-chicken habitat within the PPA when the lesser prairie-chicken is no longer a candidate for listing as a threatened or endangered species. This would result in fewer long-term impacts to habitat than that of Alternative A.

New leasing in suitable habitat within the Primary Population Area would be considered when:

- There is a calculated two to one ratio of restored acres to disturbed acres within the PPA, and
- Inter-agency coordination with the US Fish and Wildlife Service is conducted.
- The calculation would be conducted at five-year increments.
- Other considerations factoring into a decision for new leasing include, but are not limited to, the site characteristics of a tract nominated for leasing such as its proximity to occupied habitat, surface

ownership, and the density of existing infrastructure.

This would result in fewer impacts to habitat than Alternative A.

The timing stipulation would be increased by fifteen days at the beginning of March. The dates would be March 1st through June 15th. Exceptions would be considered in the SSPA and the IPA if there have not been lesser prairie-chicken located in the past two years for sightings and five years for lek locations. Exceptions would not be considered in the CMA, and the PPA, or the Habitat Evaluation Areas regardless of occupancy by lesser prairie-chicken, except in some emergency and non-emergency situations.

Based on the 20-year projection, construction of well pads, roads, and pipelines would have direct effects on 4,900 acres of habitat (245 acres per year avg.) within the Planning Area (Refer to Table 4-8).

Construction activities would use heavy equipment for leveling pads and roads, trenching and backfilling pipeline corridors and building electrical power lines (BLM 2001). Specific effects of this disturbance would include: soil churning, compaction, and loss of top soil; loss of vegetation cover, specific habitat features such as large shrubs, and species composition; and alteration of surface water flow, increased erosion, and increased likelihood of exotic plant species establishment.

These activities would cause direct disturbance and/or displacement of ground dwelling animals, disturbance and loss of habitat structures such as shrubs with nests, habitat loss through erosion, and changes in food and cover relationships due to vegetative change and increased erosion. Animal species composition and densities could change within and adjacent to any mineral development activity. Changes in the animal community and habitat structure

change in plant species composition and density would persist until habitat within the development areas is restored to near pre-disturbance conditions). However, Re-vegetation of disturbed sites is typically very slow.

For a discussion of indirect impacts, refer to the No Action Alternative and Table 4-3.

Under this alternative, it is estimated that 49 wells would be drilled per year in the Planning Area (approximately 3 full oil field developments). The total indirect disturbance would be 6,174 acres annually. Over the lifetime of this plan (20-year) there would be approximately 123,480 acres indirectly disturbed based on the RFD.

Based on the prescriptions in the geographic areas discussed above, the direct impacts of 4,900 acres (245 acres per year avg.) and the indirect impacts of 123,480 acres (6,174 acres per year) would occur exterior to the unleased portions of the CMA, occupied and suitable habitat within the PPA, occupied habitat within the SSPA, and the 17 Habitat Evaluation Areas within the IPA (See Table 4-5 for acreage figures). Therefore the impacts from the 49 wells would have minimal impacts to lesser prairie-chicken habitat excluding the leased portions within the 17 Habitat Evaluation Areas.

The pre-lease sale review of nominated tracts and the application of NSO in sand dune lizard habitat would protect dune complexes by reducing or eliminating surface disturbance and habitat fragmentation. Waivers, exceptions and modifications of NSO stipulations in non-habitat would be based on surveys for occupied and/or suitable sand dune lizard habitat.

New oil and gas leases in suitable sand dune lizard habitat would have a lease notice attached that require occupancy surveys prior to authorizing surface disturbing activities. This requirement would

also be part of the lease stipulations. Sand dune lizard occupancy surveys would be conducted by qualified personnel using accepted protocol approved by BLM. The current occupancy protocol calls for surveys to be conducted from June 1st through September 30th and avoids the heat of mid-day.

New oil/gas well pads would not be placed in dune areas within occupied or suitable habitat, or within up to 200 meters of such dune areas. Studies indicate that impacts to sand dune lizards are greatly reduced when well pad locations are 200 meters away from occupied dune complexes (Painter et. al). This represents an additional 100 meter protection area from that described in Alternative A.

Under this alternative, reclamation of twice as much habitat as that being disturbed would expedite the recovery of this important ecosystem. It is understood that with reclamation efforts of two to one that eventually reclamation would change to a one to one ratio in the distant future. Reclamation priorities would be given to areas that once contained lesser prairie-chicken. By conducting reclamation in areas that once contained lesser prairie-chicken habitat connectivity would be obtained affording the species available habitat that was once fragmented and unsuitable.

Applying the timing stipulation (March 1st through June 15th between the hours of 3:00 am and 9:00 am) on appropriate areas of habitat on public land within the Planning Area would continue to protect lesser prairie-chickens during the spring mating period and brood rearing phase. It is anticipated that a grant of exception based on the criteria found in Chapter 2 (unsuitable habitat and/or areas of no lesser prairie-chicken activity) would result in minimal impacts to the lesser prairie-chicken.

Construction of locations and around-the-clock noise generated from drilling could

impact the lesser prairie-chicken by reducing the establishment of seasonal "booming grounds" or leks, thus possibly reducing reproductive success in the species. It is believed that the noise generated by drilling rigs and/or propane/diesel operated pumpjack motors (unmuffled) could mask the booming of the male prairie-chicken and thus, the females cannot hear the booming. In turn, female lesser prairie-chicken would not arrive at the booming ground, and subsequently, there would be decreased courtship interaction and possibly decreased reproduction.

Decreased reproduction and the loss of recruitment into the local population would result in an absence of younger male lesser prairie-chickens to replace mature male lesser prairie-chicken once they expire, eventually causing the lek to disband and become inactive. Additionally, habitat fragmentation caused by development, to include but is not limited to power lines, roads and other infrastructure, could possibly decrease the habitat available for nesting, brooding and feeding activities.

In light of these requirements and mitigation measures, minimal impacts to the lesser prairie-chicken are anticipated as a result of oil and gas activity.

Exceptions to these requirements would be considered in emergency situations such as mechanical failures as determined by BLM, however, these exceptions would not be granted if BLM determines, on the basis of biological data or other relevant facts or circumstances, that the grant of an exception would disrupt prairie-chicken booming activity during the breeding season. Requests for exceptions *on a non-emergency basis* may also be considered, but these exceptions would not be granted if BLM determines that there are prairie-chicken sightings, or active leks within 1.5 miles of a proposed location.

By not granting exceptions in the above mentioned areas lesser prairie-chicken are

afforded protection against noise associated with new energy related activities during the critical mating phase to possible increase recruitment rates in the local populations.

Exceptions to the timing stipulation/COA would not be needed in the following areas, however, analysis may be contained in subsequent environmental assessments for exceptions:

- SSPA and IPA if lesser prairie-chicken are not sighted by the start of the third year.
- Habitat Evaluation Areas that do not meet the criteria for being an Habitat Evaluation Area after the evaluation process.
- Areas that do not meet the above criteria i.e. non-habitat and areas that lesser prairie-chicken have not been sighted except the Habitat Evaluation Areas.

Exceptions to the timing stipulation/condition of approval (COA) would not be considered in the following areas that pertain to Federal actions:

- In the PPA and CMA.
- In the SSPA and IPA within 1.5 miles of leks.
- In the SSPA and the IPA 1.5 miles of sightings for two years. However in the event that new sightings occur in the same area after two years the stipulation would be reapplied and exceptions would not be granted. It would not matter at what time of the year sightings occur.
- The 17 Habitat Evaluations Areas before and during the habitat evaluation process.
- Any new areas identified as a Habitat Area (HA) that were not of the original 17 Habitat Evaluations Areas, but meet or exceed the criteria for being a HA as explained in Appendix 8.
- In the event that lesser prairie-chickens are sighted exterior the Planning Area the timing stipulation would be applied

for a period of two years within a radius of 1.5 miles of the sighting. It would not matter at what time of the year the sightings occur.

In light of the circumstances under which exceptions may be granted, minimal impacts to the lesser prairie-chicken are anticipated as a result of the grant of exceptions to this COA.

Concurrent with timing stipulations, no drilling would be allowed within 200 meters of known lesser prairie-chicken leks. This provides some protection to the booming ground or adjacent nesting habitat. The pads combined with roads, and possible power lines have significant impacts to wildlife resulting in the creation of areas that lesser prairie-chickens avoid.

Reducing noise from pump jack motors to a maximum of 75 decibels (db) measured 30 feet from the source of the noise would potentially support reestablishment of booming grounds in closer proximity to pump jacks. Females may be able to hear the booming males and potentially increase reproductive success (i.e., more poult groups) as a result of reducing noise levels.

Mesquite control in shinnery oak vegetation community would result in positive impacts on lesser prairie-chicken habitat (approximately 4,000 acres per year for a total of 80,000 acres over the life of the plan). This would be a 100 percent increase of vegetative treatments over alternative A and a 400 percent increase over the No Action Alternative. These prescriptions would have short-term effects in the form of defoliating shinnery oak, but not killing it which would allow native grasses, forbs and shrubs to reestablish in areas that were once mesquite dominated. Focusing in the Planning Area for mesquite control would have positive impacts to the species and its habitats.

Possible impacts associated with OHV expansion within the Planning Area for

lesser prairie-chicken would be minimal at best. Impacts would be associated with the duration of use in an area and impacts would be directly tied to the area being used. Wildlife species that are highly mobile, such as the lesser prairie-chicken, would evacuate the area during times of OHV use, and potentially return to the area once activities have ceased. Potential impacts to sand dune lizards would be minimal as well. Sand dune lizards are a mobile species that utilize sand and shinnery oak for cover. Impacts would be associated with the duration of use in an area and impacts would be directly tied to the area being used. Due to the nature of the sand dune lizard and the habitat requirements of shinnery oak overhangs and the avoidance of open un-vegetated dunes impacts would be minimal.

Cumulative Effects

This alternative would provide more habitat protection for both lesser prairie-chicken and sand dune lizard habitat than Alternative A.

By removing roads and pads down to native soils, removing idle electrical poles and lines, as well as any other infrastructure i.e. pump houses, heater treaters and the like, coupled with proper seeding of native grasses, avoidance areas would be decreased and the habitat expanded for potential occupancy. Fragmentation is one of the issues that create habitat connectivity concerns for wildlife habitat managers. Roads, power lines and infrastructure associated with the oil field are fragmentary in nature. With the reclamation effort, over the life of the plan, connectivity of habitat can occur between habitat patches expanding the available habitat for sensitive species and potential occupation. By increasing these areas and reestablishing habitat connectivity there is a good likelihood that lesser prairie-chicken could reoccupy areas that do have a degree of oil and gas development that were once occupied.

This alternative allows for the BLM to work with industry and other entities to improve practices in the oil field to allow habitat patches to remain and allow the future development of minerals in an orderly fashion. Applying the timing stipulation to the habitat for lesser prairie-chicken would afford the species the opportunity to mate and expand populations in reclaimed areas that were once avoidance areas due to loss of habitat connectivity.

Strategic planning of reclamation in lesser prairie-chicken and sand dune lizard habitats would have a beneficial impact to the habitat used by both species. Even though 2,254 acres per year of reclamation does not appear to be a lot, connectivity is the issue. If reclamation would take place in habitats that were once occupied by the lesser prairie-chicken and currently occupied by sand dune lizard, connectivity would increase on an average of 86,800 acres, respectively, over the life of this plan amendment.

Alternative B is more restrictive than the No Action Alternative, Alternative A, and Alternative D, but less restrictive than Alternative C and Alternative E for oil and gas development. However, this alternative allows the Federal government to work with industry to minimize the impacts to the habitat for sensitive species through adaptive management. Projected initially disturbed acreage would be 245 acres annually. The cumulative impact of 20 years of oil and gas development is estimated to be 4,900 initially disturbed acres, placing this alternative in the middle range for anticipated impacts to wildlife resources.

Cultural Resources

Impacts to cultural resources would be similar to those described in the "Impacts Common to all Alternatives" section of this

chapter. Specifically, impacts to cultural resources are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

Paleontological Resources

Impacts to paleontological resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. The direct impacts of new surface disturbance are shown in Table 4-1.

Recreation

This alternative would set in place management that would allow for recreation to continue in the Planning Area while mitigating the effects of intrusion into the CMA and occupied habitat. Fewer impacts would occur under this alternative because recreation in the Planning Area would be managed to lessen the impact of users in prairie-chicken and sand dune lizard habitat.

At present, there is no data to support the premise that recreational activities within the Planning Area are the causes of species decline. However, through visitor monitoring in the Planning Area, if data becomes available that identifies recreational use as a factor in species decline, recreation planners would recommend that managers implement corrective management actions such as: seasonal closures of roads leading to lek areas; or the issuance of Special Recreation Permits (SRP). Additionally, time and noise restrictions would be in effect from 3 a.m. to 9 a.m. March 1 through June 15. These management actions would reduce impacts to the lesser prairie-chicken and the sand dune lizard.

Off-Highway Vehicle Management

Pending the completion of route designation plans, OHV would be limited to existing roads and trails within the Planning Area. Impacts would be reduced by the limited

designation rather than the open designation in the Carlsbad Field Office portion of the Planning Area.

If visitor use does not warrant expansion of the Mescalero Sands North Dune OHV Area or if conflicts with lesser prairie-chicken or the sand dune lizard habitat develop, the expansion phases would not occur.

Acreage for the expansion of each phase of the Mescalero Sands North Dune OHV Area was suggested by the wildlife biologist for the Roswell Field Office. Prior to the release of the Draft EIS, wildlife biologists reported no conflicts with special status species or their habitat. Before expanding of any phase of Mescalero Sands North Dune OHV Area, the acreage would be surveyed again to ensure that conflicts do not exist.

Impacts would be reduced under this alternative because development would be based on monitoring of public use to determine expansion. The proposed expansion would allow the possibility of reducing visitor use pressure on the area and would reduce the possible incursions of OHV use into special status species habitat.

Vegetative study maps indicate the dune complex known as the Shugart Dunes, located in the northern portion of Hackberry Lake Intensive OHV Area, is not suitable habitat for the sand dune lizard.

Designating roads and trails for OHV use in the Shugart Dunes would reduce habitat fragmentation by eliminating some roads or trails.

The Square Lake area is presently used by OHV recreation users and the formal establishment of this OHV area would recognize the use. Establishing the OHV area would allow for management of the area. Impacts to special status species habitat would be reduced because protective measures would be implemented that would protect potential sand dune lizard habitat and reduce noise during lesser

prairie-chicken mating season. Restricting vehicle width to less than 55 inches would reduce surface disturbance impacts in the OHV area and would exclude sand rails and dune buggies from using this area. Impacts would be reduced by designated routes that transverse between the open dunes.

The wildlife biologists in the Carlsbad Field Office identified the dune areas and the transverse routes between the dunes. The wildlife biologists found no conflicts exist in lesser prairie-chicken or sand dune lizard habitat. Prior to the release of the Draft EIS, wildlife biologists reported no conflicts with special status species or their habitat in the proposed Square Lake OHV Area. Prior to any development in the Square Lake OHV Area, BLM staff biologists would re-survey the area to confirm there are no conflicts with the Special Status Species or their habitat.

Interpretive signing in Mescalero Sands North Dune, Shugart Dunes, and the proposed Square Lake OHV Areas would provide opportunity for public education and awareness for the need to provide for and protect lesser prairie-chicken and sand dune lizard habitat. Impacts to special status species habitat would be reduced because of the education opportunity to inform the public land user engaged in OHV activity of the significance of protecting habitat.

In the Planning Area, impacts to lesser prairie-chicken booming would be reduced by implementing noise restrictions for OHV use if monitoring indicates this step is necessary. The noise from OHV use tends to mask lesser prairie-chicken booming which is necessary for mating.

Cumulative Effects

OHV use of what is now the Mescalero Sands North Dune OHV Area dates from the late 1940s with the availability of four-

wheel drive vehicles. Use in the Area was boosted in the late 1960s with popularity of Volkswagen-base dune buggies. BLM established the Area for OHV use in 1989.

Currently, the public is using the Square Lake region for OHV recreation use.

Pending formal designation of roads and trails, this alternative would reduce impacts to special status species habitat. The controlled expansion of Mescalero Sands North Dune OHV Area would provide for greater OHV recreation opportunities without impacts to either lesser prairie-chicken or sand dune lizard habitat. Moving the designation of the Hackberry Lake OHV Area from open to limited recognizes the existing use within the OHV area and would have no impact on either lesser prairie-chicken or sand dune lizard habitat. OHV activity would continue in the Planning Area by limiting activity to open roads, trails, and designated routes. Monitoring of OHV areas would occur to ensure compliance and discourage cross country travel. Dune complexes would be designated open where special species habitat is not present.

Monitoring of OHV activity in each Field Office to ensure compliance of the limited designation would reduce impacts. Identification of open dune areas within the established OHV areas would reduce impacts and discourage cross country travel into special status species habitat.

Pressures of visitor use would decrease by possibly expanding the existing Mescalero Sands North Dune OHV Area and potentially establishing the Square Lake OHV Area.

Special Management Areas

Impacts would be the same as the No Action Alternative.

Social and Economic Conditions

Implementing the 2001 New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing in the Planning Area would produce the same social and economic impacts as described in its environmental impact statement. As described in this EIS the livestock industry in the four-county area (Chaves, Eddy, Lea and Roosevelt) would notice little, if any impact under this alternative.

Since the development of existing oil and gas leases would continue, revenues, employment and income generated by this activity would continue at or close to current levels for the foreseeable future. Costs associated with the development requirements (plans of development, designing road networks, reclamation) would be born by the lease holder under these alternatives. More intensive development planning, however, could lead to reduced developed costs and lower overall development costs. Larger factors such as market prices would have more impact on the economic viability leases and wells than the development prescriptions of this alternative.

Offering new oil and gas leases by the BLM within the Planning Area has no direct effect on employment or income levels in the local economy. Evidence of this disconnection can be seen in Table 3-9 and Table 3-12 of Chapter 3. In the mid-1980s, employment in the oil and gas industry as well as personal income from this industry plummeted. The decline was due to market prices, not the availability of Federal minerals for lease.

Increasing new oil and gas leasing by the BLM in the Planning Area would not produce much economic benefit. Tracts not under lease prior to 1997 were unleased due to the lack of interest, in some cases, and no evidence of payable petroleum zones. Additionally, some existing oil and gas leases remain undeveloped. (See Map

2-1 and Map 2-2.) The CMA of this alternative contains a large number of dry holes completed to depths ranging from 3,000 feet deep to 10,000 feet deep. If there are economic quantities of oil and gas beneath the CMA, current technology has been unable to locate and extract these resources.

While still an important component of the local economy employment in both the agriculture and petroleum fields has decreased in relation to total employment over the past 30 years. Personal income derived from agriculture has declined while personal income from jobs in the oil and gas industry has increased. The No Action Alternative and this alternative would be unlikely to affect this trend.

Changes in economic conditions such as employment and personal income are reflected in society as a whole. Large scale changes in these conditions would be more easily documented than smaller changes. In this analysis, the four-county area possesses a somewhat diverse employment index, 737 versus a median of 961 for all counties in the U.S. (See Chapter 3) Therefore, the local economy is better able to absorb small changes such as are anticipated under this alternative.

The per capita income in the four counties trails both the New Mexico and National averages. The average earnings per job in the four counties are slightly less than the New Mexico average and substantially less than the national average. Since 71 percent of the new jobs created in the area were in the Services & Professional category (see Chapter 3), this difference cannot be tied to dependence on public land and resources.

It is more difficult to quantitatively measure social impacts. In the social context of the communities in the four counties, changes would likely be minor and relatively unnoticed under this alternative. However, individuals and families with interests in either livestock or oil and gas would be

affected in particular localities. For these individuals and families, the most noticeable impact would likely be reduced personal income, reduced operational flexibility and an increase in personal stress through increased operational restrictions.

Cumulative Effects Summary

Like Alternative A, the impacts of implementing Alternative B on specific elements have been documented in the previously in this chapter. Taken as a whole, the cumulative effects of this alternative include:

- This alternative would provide more habitat protection for both lesser prairie-chicken and sand dune lizard than Alternative A.
- A greater emphasis on sand dune lizard habitat and reclamation than Alternative A would yield greater results both in habitat protection and vegetation recovery.
- Given the relative economic diversity of the four counties surrounding the Planning Area, economic effects would be readily absorbed by the local economy and would not be noticeable to the general population. Individuals and companies would be directly affected.
- Long term impacts of implementing Standards for Rangeland Health would be a positive benefit to livestock operators. The short term impacts would be expected to be localized to certain allotments or pastures and would not occur throughout the Planning Area.
- The likelihood of listing either species would be reduced from Alternative A, thereby further reducing the potential for listing both species and the associated impacts of such a listing. Of the alternatives, this alternative best meets

the Purpose and Need described in Chapter 1.

ALTERNATIVE C

The following analyzes the impacts of implementing Alternative C, which adopts the zone concepts of Interim Management.

Lands and Realty

Same as No Action Alternative.

Fluid Minerals

Areas Closed to new Oil and Gas Leasing

Only Zone 1 of this alternative would be closed to new leasing with some exceptions (see Chapter 2). The amount of unleased Federal mineral estate is approximately 19 percent of the Federal estate within the Planning Area or approximately 2 percent of the total Federal mineral estate within the Pecos District. See Table 4-9

New Oil and Gas Leasing With a No Surface Occupancy Requirement

Unleased tracts within Zone 2 would be offered with an NSO requirement. This would be applied to approximately 2 percent of the Federal mineral estate within the Planning Area. This would amount to approximately 0.3 percent of the total Federal mineral estate within the Pecos District. New leasing is allowed in Zone 2 with a NSO stipulation. An NSO stipulation under this alternative would have the same impact as in Alternatives A and B.

When the notice of a competitive sale of oil and gas leases clearly provides that a lease would be subject to a NSO stipulation, by making a bid for the indicated parcel the bidder is bound to accept the stipulation. Lessees would be advised that issuance of a lease in the Planning Area with the NSO

TABLE 4-9 ALTERNATIVE C ACREAGE

MANAGEMENT CATEGORY	ACRES LEASED FOR OIL AND GAS	UNLEASED ACRES	TOTAL ACRES OF FEDERAL MINERALS	COMPARISON OF LEASED ACREAGE TO TOTAL PLANNING AREA ACREAGE	COMPARISON OF TOTAL UNLEASED ACRES TO TOTAL PLANNING AREA ACREAGE
Zone 1	144,622	221,195	365,817	13%	19%
Zone 2	59,910	27,257	87,167	5%	2%
Zone 3	453,546	56,573	510,119	40%	5%
Zone 4	167,652	14,568	182,220	15%	1%
Total	825,730	319,593	1,145,323	72%	28%

stipulation does not guarantee that a suitable surface location would be available for drilling or that the lease would be developed. Prospective lessees should take this into consideration prior to obtaining a lease with the NSO stipulation. If a lessee acquires a lease with an NOS stipulation attached, then it would be the responsibility of the lessee to locate a suitable surface location that does not adversely impact lesser prairie-chicken habitat or sand dune lizard habitat. The lessee also would be responsible for demonstrating through the use and application of peer-reviewed science that development of the lease would not adversely impact lesser prairie-chicken habitat or sand dune lizard habitat.

New Oil and Gas Leasing

New leases offered within Zone 3 would include a stipulation requiring a plan of development (POD) to be approved before any development would be authorized. This would add planning time and costs to development. This requirement would also allow orderly development that avoids lesser prairie-chicken leks (see Wildlife later in this section). At the same time a 1.5 mile buffer zone around active leks would have some impact on the development of oil and gas resources by increasing the amount of land closed to development. No new leasing for this alternative would have the same impact as Alternatives A and B.

Unleased Federal tracts in Zones 4 would be offered with standard terms and conditions. Resource management stipulations and conditions of approval found in current resource management plans would be at the time of application for permit to drill. Impacts of these management prescriptions are described in the 1997 Roswell RMP and 1997 Carlsbad RMPA.

Development of Existing Oil and Gas Leases

Plans of Development (PODs) are required for existing leases in Zones 1, 2 and 3. Use of PODs for orderly development began with implementation of Interim Management and therefore would have minimal additional impact in the form of increased time for planning and costs.

Sand Dune Lizard Habitat – No New Leasing

Of the unleased Federal mineral estate in the Planning Area, 75,123 acres (7 percent of the Federal Minerals in the Planning Area) would receive this prescription. The remainder of the unleased Federal minerals would be either closed to new leasing (Zone 1) or have an NSO requirement (Zone 2). See Table 4-9 and Map C-1. No new leasing for this alternative would have the same impact as Alternatives A and B.

Cumulative Effects

Based on the calculations in Appendix 7 over the past 30 years, an average of 337 wells per year were drilled on Federal minerals within the Pecos District. During that same period, an average of 27 Federal wells were plugged and abandoned.

Approximately 18 percent of the activity within the Pecos District occurs within the Planning Area. Using that percentage, approximately 61 wells per year were drilled within the Planning Area, (10 within Roswell Field Office and 51 within Carlsbad Field Office). On average five wells per year were plugged and abandoned on Federal lands in the Planning Area, one within Roswell Field Office and four within Carlsbad Field Office. Eleven total wells were plugged in the Planning Area.

Based on the RFD and the management prescriptions of this alternative, approximately 49 wells would be drilled per year and 11 wells per year would be plugged and abandoned. Initial surface disturbance would be a total of approximately 245 acres of which approximately 113 acres would reclaim and stabilize by the end of 3 years. Successful reclamation of the plugged and abandoned wells would total approximately 18 acres.

Over the next 20 years, a total of 980 wells would be drilled in the Planning Area and approximately 220 wells would be plugged and abandoned. During that period approximately 4,900 acres of surface would be disturbed; 2,254 acres would reclaim and stabilize within one year of initial disturbance and approximately 360 acres would be reclaimed from plugged and abandoned wells.

Under this alternative, 12 fewer wells would be drilled per year than the No Action Alternative. Given the history of production in this region, 10 of those 12 wells would likely be producing wells. Over 20 years, this alternative may result in the loss of 200 producing wells in the region.

Alternative Energy

Under this alternative, applications for wind and solar generating sites would be considered on a case-by-case basis. Impacts would be similar to those described under Impacts Common to All Alternatives.

The impacts to vegetation and wildlife by the construction and operation of wind energy sites have been analyzed in the 2005 Wind Energy Programmatic Environmental Impact Statement. These impacts are described in Chapter 5 of this document on pages 5-37 through 5-75. The EIS is available on-line at www.windeis.anl.gov.

Soils

Impacts to soils would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter.

Specifically, impacts to soils are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to soil resources is OHV use. Direct impacts to air quality by OHV use would be confined to designated OHV recreation areas and trails and existing trails and roads within the Planning Area. Impacts would be less those described under the No Action Alternative.

Water Resources

Impacts to water resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically, impacts to water resources are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to water resources is OHV use. Direct impacts to air quality by OHV use would be confined to designated OHV

recreation areas and trails and existing trails and roads within the Planning Area. Impacts would be less those described under the No Action Alternative.

Floodplains

Impacts to floodplain resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically impacts to floodplain resources are indirectly related to surface disturbance. However surface disturbance would not be allowed within up to 200 meters of the outer edge of 100-year floodplains, to protect the integrity of those floodplains.

Air Quality

Impacts to air quality would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically impacts to air quality are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to air quality resources is OHV use. Direct impacts to air quality by OHV use would be confined to designated OHV recreation areas and trails and existing trails and roads within the Planning Area. Impacts would be less those described under the No Action Alternative.

Vegetation

Same as No Action Alternative

Cumulative Effects

Impacts would be similar to Alternative A. By issuing fewer leases and creating Plans of Development, less vegetation would be lost and watershed function would be maintained in these areas.

Livestock Management

Same as No Action Alternative.

Cumulative Effects

By issuing fewer leases and creating Plans of Development, less surface disturbance would make more forage available. This would result in healthier cows/ heavier calves, which would bring more money at sale time.

Wildlife including Special Status Species

The impacts of this alternative would be the same as the No Action Alternative with the following additions:

Alternative C provides the most protection for lesser prairie-chicken habitat in Zone 1 (approximately 382,000 acres of Federal minerals) but would provide less protection in Zones 3 and 4 as compared to the SSPA and IPA in Alternatives A and B in both in terms of area covered and management prescriptions. The NSO stipulation identified for Zone 2 (87,167 acres of Federal minerals) under this alternative may not protect as much habitat as compared to the 1.5 mile buffer around known leks of SSPA and IPA of Alternatives A and B. Under this alternative there would be no impacts from future leasing of Federal minerals in Zone 1, which is much larger than the CMA identified in Alternatives A and B. Under this alternative, areas identified as sand dune lizard habitat would not be leased, resulting in protection of important sand dune complexes.

Potential negative impacts could result from this alternative in Zones 3 and 4, as compared to the IPA in Alternatives A and B. Under Alternative C isolated populations of lesser prairie-chickens in Zones 3 and 4 would not be awarded minimal protection,

since these zones are managed under the same prescription as the No Action Alternative with the exception of requiring PODs in Zone 3 as well as a 1.5 mile buffer around existing leks and minimal protection in Zone 4.

No new leasing in sand dune lizard habitat would have a beneficial impact to both species. This would eliminate surface disturbing activities and allow for the habitat to remain intact.

Based on the 20-year projection, construction of well pads, roads, and pipeline operations would have direct effects on 4,900 acres of habitat (245 acres per year avg.) within the Planning Area (See Table 4-10).

Construction activities would use heavy equipment for leveling pads and roads, trenching and backfilling pipeline corridors and building electrical power lines (BLM 2001). Specific effects of this disturbance would include: soil churning, compaction, and loss of top soil; loss of vegetation cover, specific habitat features such as large shrubs, and species composition; and alteration of surface water flow, increased erosion, and increased likelihood of exotic plant species establishment (*ibid*).

TABLE 4-10 ALTERNATIVE C 20-YEAR PROJECTION (DIRECT IMPACTS) FOR OIL AND GAS DEVELOPMENT			
Type of Action	Number of Actions on Federal Land	Approximate Total Acres Disturbed	
		Short Term (3-Years)	Long Term
Oil & gas development wells	980	2,254	2,646

These activities would cause direct disturbance or displacement of ground dwelling animals, disturbance and loss of

habitat structures such as shrubs with nests, habitat loss through erosion, and changes in food and cover relationships due to vegetative change and increased erosion (BLM 2001). Animal species composition and densities could change within and adjacent to any mineral development activity (*ibid*). Changes in the animal community and habitat structure change in plant species composition and density would persist until habitat within the development areas is restored to near pre-disturbance conditions (*ibid*). However, Re-vegetation of disturbed sites is typically very slow (*ibid*).

Construction activities would use heavy equipment for leveling pads and roads, trenching and backfilling pipeline corridors and building electrical power lines (BLM 2001). Specific effects of this disturbance would include: soil churning, compaction, and loss of top soil; loss of vegetation cover, specific habitat features such as large shrubs, and species composition; and alteration of surface water flow, increased erosion, and increased likelihood of exotic plant species establishment (*ibid*).

These activities would cause direct disturbance or displacement of ground dwelling animals, disturbance and loss of habitat structures such as shrubs with nests, habitat loss through erosion, and changes in food and cover relationships due to vegetative change and increased erosion (BLM 2001). Animal species composition and densities could change within and adjacent to any mineral development activity (*ibid*). Changes in the animal community and habitat structure change in plant species composition and density would persist until habitat within the development areas is restored to near pre-disturbance conditions (*ibid*). However, Re-vegetation of disturbed sites is typically very slow (*ibid*).

For a discussion of indirect impacts, refer to the No Action Alternative and Table 4-3.

Under this alternative, it is estimated that 49 wells would be drilled per year in the Planning Area (approximately 3 full oil field developments). The total indirect disturbance would be 6,174 acres annually. Over the lifetime of this plan (20-Year) there would be approximately 123,480 acres indirectly disturbed based on the RFD.

Based on the prescriptions in the geographic areas discussed above, the direct impacts to 4,900 acres (245 acres per year avg.) and the indirect impacts of 123,480 acres (6,174 acres per year) would occur exterior to the unleased portions of lesser prairie-chicken habitat: Zones 1 and 2, occupied habitat within Zone 3.

Regardless of the Zone designation no new leasing would occur in occupied and/or suitable sand dune lizard habitat, however; applying SUORs and requesting PODs, on existing leases, would aide in protecting sand dune lizard dunal complexes. Therefore the impacts from the 49 wells should have minimal impacts to occupied sand dune lizard and occupied/suitable lesser prairie-chicken habitat. This alternative provides greater protection than the 1997 RMPA, and Alternatives A and B only within occupied lesser prairie-chicken habitat but does not consider suitable lesser prairie-chicken habitats.

PODs are required in Zone 1 and 2 on existing leases, within Zones 3 and 4 PODs would be requested on a case-by-case basis. Requiring PODs within the Planning Area would provide the BLM an opportunity to work cooperatively with minerals leaseholders in developing leases, minimizing the impacts of well locations, and their associated roads, pipelines and power lines on wildlife habitat.

Impacts associated with OHV would be decreased under this alternative compared to the No Action Alternative since routes would be limited to designated roads and trails.

Cumulative Effects

Zones 1 and 2 of this alternative would provide approximately the same level of habitat protection for both lesser prairie-chicken and sand dune lizard habitat as the CMA and PPA of Alternatives A and B. Zones 3 and 4 would provide less habitat protection than the SSPA and IPA of Alternatives A and B. However, management flexibility is reduced from either Alternative A or Alternative B, and would result in reduced ability to respond to changing conditions. There would be a corresponding reduction in opportunities to apply adaptive management and the resulting rigidity would prohibit quick management responses to changes in conditions.

Strategic planning of reclamation in lesser prairie-chicken and sand dune lizard habitats would have a beneficial impact to the habitat used by both species. Even though 2,254 acres per year of reclamation does not appear to be a lot, connectivity is the issue. If reclamation would take place in habitats that were once occupied by the lesser prairie-chicken and currently occupied by sand dune lizard, connectivity would increase on an average of 85,800 acres, respectively, over the life of this plan amendment. By removing roads down to native soils, removing unused power lines, pads down to native soils and any other infrastructure, coupled with proper seeding of native grasses, the avoidance areas would be decreased and the habitat expanded for potential occupancy.

Cultural Resources

Impacts to cultural resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically impacts to cultural resources are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

Paleontological Resources

Impacts to paleontological resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically impacts to paleontological resources are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

Recreation

Impacts would be the same as described in the No Action Alternative.

Off-Highway Vehicle Management

Impacts would be the same as described in the No Action Alternative.

Special Management Areas

Impacts would be the same as described in the No Action Alternative.

Social and Economic Conditions

Implementing the 2001 New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing in the Planning Area would produce the same social and economic impacts as described in its environmental impact statement. As described in this EIS the livestock industry in the four county area (Chaves, Eddy, Lea and Roosevelt) would notice little, if any impact under this alternative.

Since the development of existing oil and gas leases would continue, revenues, employment and income generated by this activity would continue at or close to current levels for the foreseeable future. Costs associated with the development requirements (plans of development, designing road nets, reclamation) would be born by the lease holder under these alternatives. More intensive development planning, however, could lead to reduced

developed costs and lower overall development costs. Larger factors such as market prices would have more impact on the economic viability leases and wells than the development prescriptions of this alternative.

Offering new oil and gas leases by the BLM within the Planning Area has no direct connection to employment or income levels in the local economy. Evidence of this disconnection can be seen in Table 3-9 and Table 3-12 of Chapter 3. In the mid-1980s, employment in the oil and gas industry as well as personal income from this industry plummeted. The decline was due to market prices, not the availability of Federal minerals for lease.

Increasing new oil and gas leasing by the BLM in the Planning Area would not produce much economic benefit. Tracts not under lease prior to 1997, particularly those in Zone 1, were unleased due to the lack of interest in some cases and no evidence of payable petroleum zones. Additionally, some existing oil and gas leases remain undeveloped. (See Map 2-1.) The southwest portion of Zone 1 contains a large number of dry holes completed to depths ranging from 3,000 feet deep to 10,000 feet deep. If there are economic quantities of oil and gas beneath this area, current technology has been unable to locate and extract these resources.

While still an important component of the local economy employment in both the agriculture and petroleum fields has decreased in relation to total employment over the past 30 years. Personal income derived from agriculture has declined while personal income from jobs in the oil and gas industry has increased. This alternative would be unlikely to affect this trend.

Changes in economic conditions such as employment and personal income are reflected in society as a whole. Large scale changes in these conditions would be more easily documented than smaller changes.

In this analysis, the four-county area possesses a somewhat diverse employment index, 737 versus a median of 961 for all counties in the U.S. (See Chapter 3) Therefore, the local economy is better able to absorb small changes such as are anticipated under this alternative.

The per capita income in the four counties trails both the New Mexico and national averages. The average earnings per job in the four counties is slightly less than the New Mexico average and substantially less than the national average. Since 71 percent of the new jobs created in the area were in the Services & Professional category (see Chapter 3), this difference cannot be tied to dependence on public land and resources.

It is more difficult to quantitatively measure social impacts. In the social context of the communities in the four counties, changes would likely be minor and relatively unnoticed under this alternative. However, individuals and families with interests in either livestock or oil and gas would be affected in particular localities. For these individuals and families, the most noticeable impact would likely be reduced personal income, reduced operational flexibility and an increase in personal stress through increased operational restrictions.

Cumulative Effects Summary

Like the other Alternatives, the impacts of implementing Alternative C on specific elements have been documented in the previously in this chapter. Taken as a whole, the cumulative effects of this alternative include:

- Zones 1 and 2 of this alternative would provide approximately the same level of habitat protection for both lesser prairie-chicken and sand dune lizard as the CMA and PPA of Alternatives A and B. Zones 3 and 4 would provide less habitat protection than the SSPA and IPA of Alternatives A and B. Therefore,

this alternative does not meet the Purpose and Need described in Chapter 1.

- Management flexibility is reduced from either Alternative A or Alternative B, reducing the ability to respond to changing conditions. There would be a corresponding reduction in opportunities to apply adaptive management. The resulting rigidity would prohibit quick management responses to changes in conditions.
- Given the relative economic diversity of the four counties surrounding the Planning Area, economic effects would be readily absorbed by the local economy and would not be noticeable to the general population. Individuals and companies would be directly affected.
- Long-term impacts of implementing Standard for Rangeland Health would be a positive benefit to livestock operators. The short term impacts would be expected to be localized to certain allotments or pastures and would not occur throughout the Planning Area.

ALTERNATIVE D

The following analyzes the impacts of implementing Alternative D, which focuses on currently occupied habitat for both species.

Lands and Realty

Impacts would be the same as described in the No Action Alternative.

Fluid Minerals

This alternative closes new leasing of Federal minerals within occupied habitat. Unitization of leases would be required in the occupied habitat in an effort to minimize surface impacts in the proposed area. Under this alternative, cooperative

unitization and lease suspension opportunities that preserve occupied habitat would be promoted. Impacts to leasing, exploration and development of oil and gas resources with required unitization would be insignificant. This alternative restricts only the location of well pads and facilities.

No development would be allowed in occupied sand dune lizard habitat. This is a standard operating procedure and has no additional impact.

Cumulative Effects

Based on the calculations in Appendix 7 over the past 30 years, an average of 337 wells per year were drilled on Federal minerals within the Pecos District. During that same period, an average of 27 Federal wells were plugged and abandoned. Approximately 18 percent of the activity within the Pecos District occurs within the Planning Area. Using that percentage, approximately 61 wells per year were drilled within the Planning Area, (10 within Roswell Field Office and 51 within Carlsbad Field Office). On average five wells per year were plugged and abandoned on Federal lands in the Planning Area, one within Roswell Field Office and four within Carlsbad Field Office. Eleven total wells were plugged in the Planning Area.

Based on the RFD and the management prescriptions of this alternative, approximately 54 wells would be drilled per year and 11 wells per year would be plugged and abandoned. Initial surface disturbance would be a total of approximately 270 acres of which approximately 124 acres would reclaim and stabilize by the end of three years. Successful reclamation of the plugged and abandoned wells would total approximately 18 acres.

Over the next 20 years a total of 1080 wells would be drilled in the Planning Area and approximately 220 wells would be plugged and abandoned. During that period

approximately 5,400 acres of surface would be disturbed; 2,484 acres would reclaim and stabilize within three years of initial disturbance and approximately 360 acres would be reclaimed from plugged and abandoned wells.

Under this alternative, 7 fewer wells would be drilled per year than the No Action alternative. Given the history of production in this region, 6 of those 7 wells would likely be producing wells. Over 20 years, this alternative may result in the loss of 120 producing wells in the region.

Alternative Energy

Under this alternative wind and solar generation sites would be confined to areas that would have no negative impacts to occupied lesser prairie-chicken and sand dune lizard habitat.

The impacts to vegetation and wildlife by the construction and operation of wind energy sites have been analyzed in the 2005 Wind Energy Programmatic Environmental Impact Statement. These impacts are described in Chapter 5 of this document on pages 5-37 through 5-75. The EIS is available on-line at www.windeis.anl.gov.

Soils

Impacts to soils would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter.

Specifically, impacts to soils are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to soil quality resources is OHV use. Direct impacts to soil quality by OHV use would be confined to designated OHV recreation areas and trails and existing trails and roads within the Planning Area.

TABLE 4-11 ALTERNATIVE D ACREAGE					
MANAGEMENT CATEGORY	ACRES LEASED FOR OIL AND GAS	UNLEASED ACRES	TOTAL ACRES OF FEDERAL MINERALS	COMPARISON OF LEASED ACREAGE TO TOTAL PLANNING AREA ACREAGE	COMPARISON OF TOTAL UNLEASED ACRES TO TOTAL PLANNING AREA ACREAGE
Occupied Habitat	823,555	120,851	200,917	1,145,323	11%

Impacts would be less those described under the No Action Alternative.

Water Resources

Impacts to water resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to water resources is OHV use. Indirect impacts to water resources by OHV use would be confined to designated OHV recreation areas and trails and existing trails and roads within the Planning Area.

Floodplains

Impacts to floodplain resources would be similar to those described in the "Impacts Common to All Alternatives" section of this chapter. Specifically, impacts to floodplain resources are indirectly related to surface disturbance. However surface disturbance would not be allowed within up to 200 meters of the outer edge of 100-year floodplains, to protect the integrity of those floodplains.

Air Quality

Impacts to air quality would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to air quality resources is OHV use. Direct impacts to air quality by OHV use would be confined to designated OHV recreation areas and trails and existing trails and roads within the Planning Area. Impacts would be less those described under the No Action Alternative.

Vegetation

Impacts would be the same as described in Alternative A, except the five year wait before treating adjoining areas in occupied habitat would be dropped. The impacts would be similar to Alternative A, and would allow more treatments to be completed in a shorter time frame. However, since treatments would target only areas with special status species occupied habitat, less acres would be treated than under Alternative A. Areas within the Planning Area, but without occupied habitat, would have impacts similar to the No Action Alternative.

Cumulative Effects

Impacts would be the same as those described in Alternative A, but on a smaller scale since management focus would be on occupied habitat only.

Livestock Management

Under this alternative, management direction would follow the No Action Alternative, except grazing management practices to meet vegetative and habitat parameters for the lesser prairie-chicken and sand dune lizard would be applied only

in those pastures with occupied habitat. Impacts would be similar to those described under Alternative A, but on a smaller scale and on fewer allotments, as only pastures with occupied habitat would be subject to these management prescriptions.

Cumulative Effects

Impacts would be the same as those described in Alternative A, but on a smaller scale since management focus would be only within occupied habitat. Fewer grazing operators would be impacted, since the management focus would only be in occupied habitat.

Wildlife including Special Status Species

Under this alternative, impacts to wildlife habitat would be the same as No Action Alternative, except the restrictions on new oil and gas leasing and associated rights-of-way would only occur within occupied habitats for the lesser prairie-chicken and the sand dune lizard. See the Minerals section of this chapter for acres of occupied lesser prairie-chicken habitat.

This alternative would provide the protection from new leasing in occupied habitats based on current information but would not afford protection from new leasing in habitat that is currently suitable but unoccupied. Therefore, this alternative would not protect habitat for population expansion because development would be allowed in suitable habitat or in un-surveyed areas that may currently be occupied but have not been surveyed for the presence of lesser prairie-chicken and sand dune lizard populations.

Based on the 20-year projection, construction of well pads, roads, and pipeline operations would have direct effects on 5,400 acres of habitat (270 acres per year average) within the Planning Area (See Table 4-12).

TABLE 4-12 ALTERNATIVE D 20-YEAR PROJECTION (DIRECT IMPACTS) FOR OIL AND GAS DEVELOPMENT			
Type of Action	Number of Actions on Federal Land	Approximate Total Acres Disturbed	
		Short Term (3-Years)	Long Term
Oil & gas development wells	1080	2,484	2,916

Construction activities would use heavy equipment for leveling pads and roads, trenching and backfilling pipeline corridors and building electrical power lines (BLM 2001). Specific effects of this disturbance would include: soil churning, compaction, and loss of top soil; loss of vegetation cover, specific habitat features such as large shrubs, and species composition; and alteration of surface water flow, increased erosion, and increased likelihood of exotic plant species establishment (*ibid*).

These activities would cause direct disturbance and/or displacement of ground dwelling animals, disturbance and loss of habitat structures such as shrubs with nests, habitat loss through erosion, and changes in food and cover relationships due to vegetative change and increased erosion (BLM 2001). Animal species composition and densities could change within and adjacent to any mineral development activity (*ibid*). Changes in the animal community and habitat structure change in plant species composition and density would persist until habitat within the development areas is restored to near pre-disturbance conditions (*ibid*). However, Re-vegetation of disturbed sites is typically very slow (*ibid*).

For a discussion of indirect impacts, refer to the No Action Alternative and Table 4-3.

Under this alternative it is estimated that 54 wells would be drilled per year in the Planning Area (approximately 3 full oil field developments). The total indirect disturbance would be 6,804 acres annually. Over the lifetime of this plan (20-Year) there would be approximately 136,080 acres indirectly disturbed based on the RFD.

Based on the prescriptions in this alternative discussed above, the direct impacts to 5,400 acres (270 acres per year avg.) and the indirect impacts of 136,080 acres (6,804 acres per year) would occur exterior to documented occupied habitat that is unleased. Therefore the impacts from the 54 wells should have minimal impacts to unleased documented occupied Lesser Prairie-chicken/Sand Dune Lizard habitat. However, all un-occupied suitable habitat would be open for new leasing and development.

PODs would be required in occupied Lesser Prairie-chicken/Sand Dune Lizard habitats. Requiring PODs within these occupied habitats would provide the BLM an opportunity to work cooperatively with minerals leaseholders in developing leases, minimizing the impacts of well locations, and their associated roads, pipelines and power lines on wildlife habitat. This alternative would decrease the number of PODs from alternatives A, B and C, therefore the degree of fragmentation and surface disturbance within suitable unoccupied habitats would be greater than in the above mentioned alternatives.

Cumulative Effects

This alternative would provide the amount of habitat protection for both species and the cumulative effects of this alternative would be similar to those of the No Action Alternative. This alternative does not allow for the expansion of habitats or species populations within the entire Planning Area and, therefore, would be considered a negative impact to both species and their habitats.

Strategic planning of reclamation in lesser prairie-chicken and sand dune lizard habitats would have a beneficial impact to the habitat used by both species. Even though 2,484 acres per year of reclamation does not appear to be a lot, connectivity is the issue. If reclamation would take place in habitats that were once occupied by the lesser prairie-chicken and currently occupied by sand dune lizard, connectivity would increase on an average of 56,110 acres, respectively, over the life of this plan amendment. By removing roads down to native soils, removing unused power lines, pads down to native soils and any other infrastructure, coupled with proper seeding of native grasses, the avoidance areas would be decreased and the habitat expanded for potential occupancy.

Alternative D is more restrictive than the No Action Alternative but less restrictive than all of the other alternatives. Projected initially disturbed acreage would be 270 acres annually. The cumulative impact of 20 years of oil and gas development is estimated to be 4,900 initially disturbed acres. Impacts to wildlife resources would be considered greater under this alternative than in A, B and C.

Cultural Resources

Impacts to cultural resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically, impacts to cultural resources are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

Paleontological Resources

Impacts to paleontological resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically, impacts to paleontological resources are indirectly related to surface disturbance. The direct

impacts of new surface disturbance are shown in Table 4-1.

Recreation

Same as No Action Alternative

Off-Highway Vehicle Management

Pending the completion of route designation plans, OHV would be limited to existing roads and trails within the Planning Area. This management action would align the Carlsbad portion of the Planning Area with the current Roswell management prescription in the area. This management action would bring the Planning Area into compliance with current BLM planning guidance concerning OHV use.

Only phase one of the proposed three-phase development would occur at Mescalero Sands North Dune OHV Area (see Map B-3). Under this alternative Mescalero Sands North Dune OHV Area would be expanded from 562 acres to 980 acres. Surface disturbance impacts would be reduced as opposed to a three phase development under Alternative B. However, impacts to off highway vehicle use would occur and the Mescalero Sands North Dune OHV Area would be adversely impacted from over use as user activity increases.

Development and improvements of facilities would continue in established OHV areas in compliance with developed management and recreation activity plans for each area.

These plans would detail development in a manner that would provide for recreation and establish public health and safety.

This alternative would allow for interpretive signing providing opportunity for public education and awareness for the need to provide for and protect lesser prairie-chicken and sand dune lizard habitat.

In the Mescalero Sands North Dune OHV Area, impacts to male booming would be

reduced by implementing noise restrictions for off highway vehicle use. The noise from OHV use tends to mask male booming which is necessary for mating. Noise restrictions would be in effect from the hours of 3 a.m. to 9 a.m. from March 1 through June 15.

Cumulative Effects

OHV use of what is now the Mescalero Sands North Dune OHV Area dates from the late 1940s with the availability of four-wheel drive vehicles. Use in the Area was boosted in the late 1960s with popularity of Volkswagen-base dune buggies. BLM established the Area for OHV use in 1989.

Currently, the public is using the Square Lake region for OHV recreation use.

Pending formal designation of roads and trails, this alternative would reduce impacts to special status species habitat. The controlled expansion of Mescalero Sands North Dune OHV Area would provide for greater OHV recreation opportunities without impacts to either lesser prairie-chicken or sand dune lizard habitat. Moving the designation of the Hackberry Lake OHV Area from open to limited recognizes the existing use within the OHV area and would have no impact on either lesser prairie-chicken or sand dune lizard habitat.

OHV activity would continue in the Planning Area by limiting activity to open roads, trails, and designated routes. Monitoring of OHV areas would occur to ensure compliance and discourage cross country travel. Dune complexes would be designated open where special species habitat is not present.

Monitoring of OHV activity in each field office to ensure compliance of the limited designation would reduce impacts. Identification of open dune areas within the established OHV areas would reduce impacts and discourage cross country travel into Special Status Species habitat areas.

Pressures of visitor use would decrease by possibly expanding the existing Mescalero Sands North Dune OHV Area.

Special Management Areas

Impacts would be the same as the No Action Alternative.

Social and Economic Conditions

Implementing the 2001 New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing in the Planning Area would produce the same social and economic impacts as described in its environmental impact statement. As described in this EIS the livestock industry in the four- county area (Chaves, Eddy, Lea and Roosevelt) would notice little, if any impact under this alternative.

Since the development of existing oil and gas leases would continue, revenues, employment and income generated by this activity would continue at or close to current levels for the foreseeable future. Costs associated with the development requirements (plans of development, designing road nets, reclamation) would be born by the lease holder under these alternatives. More intensive development planning, however, could lead to reduced developed costs and lower overall development costs. Larger factors such as market prices would have more impact on the economic viability leases and wells than the development prescriptions of this alternative.

Offering new oil and gas leases by the BLM within the Planning Area has no direct connection to employment or income levels in the local economy. Evidence of this disconnection can be seen in Table 3-9 and Table 3-12 of Chapter 3. In the mid-1980s, employment in the oil and gas industry as well as personal income from this industry plummeted. The decline was due to market

prices, not the availability of Federal minerals for lease.

Increasing new oil and gas leasing by the BLM in the Planning Area would not produce much economic benefit. Tracts not under lease prior to 1997 were unleased due to the lack of interest in some cases and no evidence of payable petroleum zones. Additionally, some existing oil and gas leases remain undeveloped. (See Map 2-1.) The portion of the Planning Area in southeast Chaves County contains a large number of dry holes completed to depths ranging from 3,000 feet deep to 10,000 feet deep. If there are economic quantities of oil and gas beneath this area, current technology has been unable to locate and extract these resources.

While still an important component of the local economy employment in both the agriculture and petroleum fields has decreased in relation to total employment over the past 30 years. Personal income derived from agriculture has declined while personal income from jobs in the oil and gas industry has increased. This alternative would be unlikely to affect this trend.

Changes in economic conditions such as employment and personal income are reflected in society as a whole. Large scale changes in these conditions would be more easily documented than smaller changes. In this analysis, the four-county area possesses a somewhat diverse employment index, 737 versus a median of 961 for all counties in the U.S. (See Chapter 3) Therefore, the local economy is better able to absorb small changes such as are anticipated under this alternative. The per capita income in the four counties trails both the New Mexico and national averages. The average earnings per job in the four counties is slightly less than the New Mexico average and substantially less than the national average. Since 71 percent of the new jobs created in the area were in the Services & Professional category (see

Chapter 3), this difference cannot be tied to dependence on public land and resources.

It is more difficult to quantitatively measure social impacts. In the social context of the communities in the four counties, changes would likely be minor and relatively unnoticed under this alternative. However, individuals and families with interests in either livestock or oil and gas would be affected in particular localities. For these individuals and families, the most noticeable impact would likely be reduced personal income, reduced operational flexibility and an increase in personal stress through increased operational restrictions.

Cumulative Effects Summary

Like the other Alternatives, the impacts of implementing Alternative D on specific elements have been documented previously in this chapter. This alternative provides occupied habitat protection for both species and the cumulative effects of this alternative would be similar to those of the No Action Alternative. Therefore, it does not meet the Purpose and Need described in Chapter 1.

ALTERNATIVE E

The following analyzes the impacts of implementing Alternative E, which would apply the suggestions for special management from the Lesser Prairie-chicken Area of Critical Environmental Concern (ACEC)

Lands and Realty

Impacts would be the same as described in Alternative A with additional impacts on rights-of-way development from setbacks would be the same as those described for avoidance or exclusion areas, with delays in construction and increases in distance from realignments. Increased construction costs would result.

Fluid Minerals

This alternative requires a 5-year moratorium on all new oil and gas activity in certain areas of the proposed ACEC. This action would have a significant impact on leasing, exploration, and development of resources within the proposed ACEC. There are 584 leases in the moratorium area.

Implementing a 5-year moratorium would require legislation because a moratorium would pre-empt existing lease rights and deny lessees rights granted under the Mineral Lease Act. Denying existing lease rights, which would deny access to the lease, would likely result in takings cases being filed for existing leases in the moratorium area.

No drilling would be allowed within 1.5 km (.9 miles) of known leaks in the Adaptive Management Area of the proposed ACEC. The impact associated with this action is one of scale. This alternative would not allow drilling within 1.5 km (0.9 miles), while other alternatives would not allow drilling within 1.5 miles.

This alternative proposes the withdrawal of locatable and salable mineral entry from the entire proposed ACEC area. This action would potentially have a significant impact on exploration and development of mineral material resources within the proposed ACEC and subsequently impact the development of oil and gas resources by increasing the hauling and transportation costs of surfacing materials. It would also have a significant impact on other industries that use mineral materials, such as road and highway construction, general construction, etc.

This alternative proposes to withdraw the entire proposed ACEC area from non-energy mineral leasing. This action would have a significant impact on the exploration and development of solid leasable (sulfur) mineral resources.

Cumulative Impacts

Based on the calculations in Appendix 7 over the past 30 years, an average of 337 wells per year were drilled on Federal minerals within the Pecos District. During that same period, an average of 27 Federal wells were plugged and abandoned. Approximately 18 percent of the activity within the Pecos District occurs within the Planning Area. Using that percentage, approximately 61 wells per year were drilled within the Planning Area, (10 within Roswell Field Office and 51 within Carlsbad Field Office). On average five wells per year were plugged and abandoned on Federal lands in the Planning Area, one within Roswell Field Office and four within Carlsbad Field Office. Eleven total wells were plugged in the Planning Area.

The impacts of this alternative would negatively impact new oil and gas development since no new development of any mineral resources would be allowed for 5 years. This alternative affects 237,231 acres, less than 25 percent of the total lands included in the other alternatives.

Based on the RFD and the management prescriptions of this alternative, approximately 32 wells would be drilled per year in those areas outside the proposed ACEC. There would be no mineral exploration or development inside the proposed ACEC. Eleven wells per year would be plugged and abandoned outside the proposed ACEC. Initial surface disturbance would be a total of approximately 160 acres of which approximately 74 acres would reclaim and stabilize by the end of three years. Successful reclamation of the plugged and abandoned wells would total approximately 18 acres.

Over the 5 years of the moratorium, a total of 160 wells would be drilled in the Planning Area and approximately 55 wells would be plugged and abandoned. During that period approximately 800 acres of surface would

be disturbed; 368 acres would reclaim and stabilize within three years of initial disturbance and approximately 90 acres would be reclaimed from plugged and abandoned wells.

Under this alternative, 29 fewer wells would be drilled per year than the No Action Alternative. Given the history of production in this region, 23 of those 29 wells would likely be producing wells. Over 20 years, this alternative may result in the loss of 460 producing wells in the region.

Exploration and development of fluid mineral resources beyond the 5-year moratorium is unknown. If this ACEC proposal is adopted and approved as written, additional legislation would be required to manage resources after the 5-year moratorium has expired.

Alternative Energy

The ACEC nomination made no mention of alternative energy sites (see Appendix 3). Under this alternative, applications for wind and solar generating sites would be considered on a case-by-case basis. Impacts would be similar to those described under the No Action Alternative.

The impacts to vegetation and wildlife by the construction and operation of wind energy sites have been analyzed in the 2005 Wind Energy Programmatic Environmental Impact Statement. These impacts are described in Chapter 5 of this document on pages 5-37 through 5-75. The EIS is available on-line at www.windeis.anl.gov.

Soils

Impacts to soils would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically, impacts to soils are indirectly related to surface disturbance. The direct

TABLE 4-13 ALTERNATIVE E ACREAGE					
MANAGEMENT CATEGORY	ACRES LEASED FOR OIL AND GAS IN ACEC	UNLEASED ACRES IN ACEC	TOTAL ACRES OF FEDERAL MINERALS IN ACEC	PERCENT OF TOTAL LEASED IN ACEC	PERCENT OF TOTAL UNLEASED IN ACEC
Moratorium	126,890	110,341	237,231	53%	47%

impacts of new surface disturbance are shown in Table 4-1.

The other impact to soils resources is OHV use. Direct impacts to soils by OHV use would be confined to designated OHV recreation areas and trails and existing trails and roads within the Planning Area. Impacts would be less those described under the No Action Alternative.

Water Resources

Impacts to water resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically, impacts to water resources are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to water resources is OHV use. Direct impacts to water resources by OHV use would be confined to designated OHV recreation areas and trails and existing trails and roads within the Planning Area. Impacts would be less those described under the No Action Alternative.

Floodplains

Impacts to floodplain resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically impacts to floodplain resources are indirectly related to surface disturbance. However surface disturbance would not be allowed within up to 200 meters of the outer edge of 100-year floodplains, to protect the integrity of those floodplains.

Air Quality

Impacts to air quality would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically impacts to air quality are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

The other impact to air quality resources is OHV use. Direct impacts to air quality by OHV use would be confined to designated OHV recreation areas and trails and existing trails and roads within the Planning Area. Impacts would be less those described under the No Action Alternative.

Vegetation

Under this alternative, there would be no tebuthiuron use within the boundaries of the proposed ACEC. If herbicides are deemed useful by the management team to retard growth of shinnery oak and promote grass cover, other less lethal herbicides should be used in place of tebuthiuron. The outright ban on tebuthiuron use could reduce the effectiveness and increase the cost of treatments needed to move the vegetative resource towards meeting the New Mexico Standards for Public Land Health.

As described in the Energy section above, over the 5 years of the moratorium, 800 acres of surface would be disturbed; 368 acres would reclaim and stabilize within three years of initial disturbance and approximately 90 acres would be reclaimed from plugged and abandoned wells. This leaves 342 acres of vegetative disturbance.

Cumulative Effects

Under Alternative E, areas outside of the proposed ACEC but within the Planning Area would be managed under current management practices (No Action).

Therefore, impacts would be the same as those in No Action. This alternative may protect and have a positive effect on vegetation and make progress towards meeting Standards for Rangeland Health within the proposed ACEC boundary, but does not provide these opportunities on a landscape scale.

In the moratorium area and experimental grazing around lek areas, there would be more cover/standing biomass, resulting in improved watershed functions in these areas. As in Alternative A, the impact would be largely dependant on precipitation. The rest of the Planning Area would have impacts similar to the No Action Alternative.

Livestock Management

Under this alternative, areas outside of the proposed ACEC but within the Planning Area would be managed under current management practices (No Action Alternative) and with similar impacts. Those allotments not meeting Public Land Health Standards would result in a reduction of approximately 7,660 AUMs.

Areas within the proposed ACEC would be subject to no grazing for 5 years within the Moratorium Areas, and limited grazing in the Adaptive Management Areas (see Appendix 3 and Map E- 1). A total of 36,510 AUMs per year would be lost during the 5-year no grazing moratorium.

The Moratorium Area includes 23 allotments in the Roswell Field Office and 9 allotments in the Carlsbad Field Office. Impacts of no grazing can be described as low, moderate, and high for each allotment.

Low impact allotments are those that have a small portion of the allotment within the

Moratorium Areas and would thus have limited acreage excluded from livestock use. The ranching operation would proceed with no or minimal change. Moderate impact allotments are those that have enough of the allotment included in the Moratorium Area that some type of livestock use would be made, but numbers would be reduced and fences would need to be installed to exclude the no graze area from livestock. The ranching operation would continue, but with substantial change. High impact allotments are those that have all or most of the allotment within the Moratorium Area, so livestock grazing would not occur.

In the Roswell Field Office, four allotments would be low impact, four allotments would be moderate impact, and 15 allotments would be high impact. In the Carlsbad Field Office, three allotments would be low impact, one allotment would be moderate impact, and five allotments would be high impact.

Table 4-14 shows grazing allotments that would be included in the Moratorium Area.

The allotment numbers that start with a "6" are managed by the Roswell Field Office and those that start with a "7" are managed by the Carlsbad Field Office.

AUMs lost due to the 5-year no graze period proposed in this alternative range from 2.5 percent to 100 percent of any given permit or lease. For this 5-year period, a total of seven allotments would lose all the AUMs authorized for grazing, nine would lose more than 75 percent of authorized AUMs and an additional five would lose 50 to 75 percent of authorized AUMs. In other words, 21 of the 32 allotments, or 64 percent, in the Moratorium Area would lose half to all of their income derived from cattle ranching over this time frame. Another negative impact to livestock grazing would be that the remaining 11 allotments would have additional costs to fence out the Moratorium Area and would lose revenue due to AUM reductions.

Experimental livestock grazing in the Adaptive Management Area, and within 1.5 miles of lek sites, would result in approximately 3,200 acres not being grazed and another 3,200 acres having light intensity grazing after June 30 of each year. In order to avoid these lek sites, some type of fence would have to be installed around the buffer area or livestock would have to be removed from the entire pasture.

If fences are constructed around lek sites, this could possibly be a detriment to lesser prairie chickens, as they become perching posts for raptors and may cause direct mortality or injury when to lesser prairie chickens flying into or out of booming grounds. These fences may also effect livestock movement patterns and create bottlenecks depending upon location and size.

This would result in negative economic impacts to ranching operations such as fewer calves being produced from the experimental grazing acreage, additional costs to move livestock from a "lek" pasture to a "non-lek" pasture, renting additional private pasture to support the herd while they could not graze on public land, and increased maintenance costs on range improvement projects necessary to meet habitat requirements. If cattle numbers on the allotment stay the same, higher utilization of forage would occur in the "non-lek" areas. A positive impact would be increased forage production and forage diversity that the remaining cattle may graze.

The Adaptive Management Area also contains a number of large, tebuthiuron treated pastures where high concentrations of the herbicide were applied (See Appendix 3). Surveys within these treated pastures have failed to locate lesser prairie-chickens nesting or rearing broods. Therefore, these areas would be exempt from the livestock management recommendations discussed here, and livestock grazing would simply comply with all applicable Federal law in

these areas. Impacts would be similar to the No Action Alternative.

Under Alternative E, areas outside of the proposed ACEC but within the Planning Area would be managed under current management practices (No Action Alternative). This alternative would provide livestock management practices to improve lesser prairie-chicken habitat within the proposed ACEC boundary, but would not address applying these practices across the entire Planning Area.

Cumulative Effects

In the moratorium area there would be no grazing for 5 years, effectively putting these operators out of business. This economic impact would not only be felt at the ranch level, but cause losses to other businesses that support ranching. In the experimental grazing areas around leks, less area would be available to graze, causing increased costs to fence out cattle, supplemental feed, or rent other pastures. These higher costs would take money out of ranch budgets that would normally be spent at other businesses that support ranching. These businesses would also suffer economic losses. The rest of the Planning Area would have impacts similar to the No Action Alternative.

Wildlife including Special Status Species

Under this alternative, impacts to wildlife habitat from realty actions would be the same as the No Action Alternative, outside the ACEC boundaries, with the exception of positive impacts from the result of lands acquisitions.

A 5-year moratorium on livestock grazing and oil and gas production would have a positive impact for that time frame.

Based on a 5-year projection, construction of well pads, roads, and pipeline operations would have direct effects on 800 acres of

TABLE 4-14 GRAZING ALLOTMENTS WITHIN THE MORATORIUM AREA					
ALLOTMENT NUMBER	ALLOTMENT NAME	PUBLIC LAND ACRES	PERMITTED AUMS	AUMS REDUCED	PERCENT REDUCTION
65010	Mitchell Dairy	2,478	516	336	65.1
65013	Falsey Draw	1,924	348	144	41.4
65015	J. Southard	160	36	36	100.0
65016	Southard	920	144	144	100.0
65029	Wilcox Well	6,203	1,420	1,368	96.3
65030	Vest Lake	320	84	84	100.0
65032	Davis	8,479	1,881	1,881	100.0
65034	White Lakes- Crosby	16,814	3,527	972	27.6
65039	Palla Ranch	1,965	336	168	50.0
65043	Sand Ranch	27,112	4,822	3,876	80.4
65044	Andrus Ranch	1,361	297	297	100.0
65045	Caprock Ranch	1,860	352	16	4.5
65049	Clemmons	52,68	1,609	1,609	100.0
65050	Clemmons Sec 15	1,920	468	84	17.9
66051	Marley Cap Sec 3	10,695	2,100	1,740	82.9
65053	Pearce Ranch	31,406	4,984	3,732	74.9
65063	Julia Culp	2,944	449	348	77.5
65065	Under The Hill	6,124	2,004	1,512	75.4
65073	Millard Derrick	2,956	549	360	65.6
65074	Sand Camp Ranch	7,283	1,283	132	10.3
65075	Turkey Track	230,502	37,940	2,208	5.8
65077	LS Wouldiams	18,828	2,978	2,676	89.9
65078	Slash ML	5,792	967	348	36.0
76006	Pumpjack S.	16,760	1,758	315	17.9
76007	Maljamar S.	12,448	1,452	1,360	93.7
76008	Querecho Plains	9,562	1,339	1,339	100.0
76011	Laguna Tonto	14,238	11,860	6,526	55.0
76058	Eddy 13	6,400	633	501	79.1
77004	Loco Hills	14,183	1,806	45	2.5
77012	Twin Wells N.	120,469	11,664	1,382	11.8
77013	Clayton Basin	50,448	10,200	425	4.2
77043	Little Lake	5,119	691	549	79.5
TOTALS		*642,943	110,497	36,510	33.0
NOTE: Total acres do not equal the area of the proposed ACEC or the Planning Area because these allotments overlap the boundaries of the proposed ACEC or the Planning Area or both.					

habitat (160 acres per year avg.) within the Planning Area (See Table 4-15).

Construction activities would use heavy equipment for leveling pads and roads, trenching and backfilling pipeline corridors and building electrical power lines (BLM 2001). Specific effects of this disturbance would include: soil churning, compaction, and loss of top soil; loss of vegetation cover, specific habitat features such as large shrubs, and species composition; and alteration of surface water flow, increased erosion, and increased likelihood of exotic plant species establishment (*ibid*).

**TABLE 4-15
ALTERNATIVE E
20-YEAR PROJECTION (DIRECT
IMPACTS) FOR OIL AND GAS
DEVELOPMENT**

Type of Action	Number of Actions on Federal Land	Approximate Total Acres Disturbed	
		Short Term (3-Years)	Long Term
Oil & gas development wells	160	303	497

These activities would cause direct disturbance and/or displacement of ground dwelling animals, disturbance and loss of habitat structures such as shrubs with nests, habitat loss through erosion, and changes in food and cover relationships due to vegetative change and increased erosion (BLM 2001). Animal species composition and densities could change within and adjacent to any mineral development activity (*ibid*). Changes in the animal community and habitat structure change in plant species composition and density would persist until habitat within the development areas is restored to near pre-disturbance conditions (*ibid*). However, Re-vegetation of disturbed sites is typically very slow (*ibid*).

For a discussion of indirect impacts, refer to the No Action Alternative and Table 4-3.

Based on the RFD (see Appendix 7), it assumes that there would be 32 wells (approximately 2 full field developments) developed on an annual basis, for a total indirect disturbance of 4,032 acres annually. Over the lifetime of this plan (5-Year) there would be approximately 20,160 acres indirectly disturbed based on the RFD.

Based on the prescriptions in this alternative discussed above, the direct impacts to 800 acres (160 acres per year avg.) and the indirect impacts of 20,160 acres (4,032 acres per year) would occur exterior to occupied habitat. Therefore, the impacts from the 32 wells should have minimal impacts to occupied lesser prairie-chicken habitat within the ACEC. The remainder of lesser prairie-chicken/sand dune lizard habitat would be managed with the same prescriptions in the No Action Alternative.

Areas of sand dune lizard habitat outside the boundaries of the proposed ACEC would receive no direct management direction under this alternative. Therefore, impacts to sand dune lizard habitat in areas outside the proposed ACEC boundaries would be the same as the No Action Alternative

Alternatives A, B and C would cover most of the public land and Federal mineral estate intersecting with the habitat of the lesser prairie-chicken and sand dune lizard. In comparison, the proposed ACEC boundary covers only 26 percent of the same area, consequently alternatives A, B or C would provide additional protection over the proposed ACEC proposal.

Cumulative Effects

The proposed ACEC focuses management only on the lesser prairie-chicken and ignores all other special status species occupying the same ecosystem. The proposed ACEC and its nomination package (see Appendix C) would provide no management recommendations or guidance for occupied habitat occurring outside the

boundaries of the proposed ACEC. Therefore, the impacts on the portions of the Planning Area outside the proposed ACEC boundaries would be the same as the No Action Alternative. Additionally, the proposed ACEC and its nomination package neither mentions nor provides for expansion of the species habitat or population outside the boundaries of the proposed ACEC. This alternative does not allow for management to work with industry for the development of minerals that are located in areas that are located in unsuitable habitat for both species.

The negative effects on lesser prairie-chicken and sand dune lizard habitat would outweigh the positive effects on these two habitat types by discounting connectivity issues from the northern habitat to the southern habitat, not allowing the BLM to work with industry to coordinate conservation in the two habitat types, ignoring the habitat that is exterior the proposal for both species, and incorporates adaptive management only in a small portion of the Planning Area.

Cultural Resources

Impacts to cultural resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically, impacts to cultural resources are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

Paleontological Resources

Impacts to paleontological resources would be similar to those described in the "Impacts Common to all Alternatives" section of this chapter. Specifically impacts to paleontological resources are indirectly related to surface disturbance. The direct impacts of new surface disturbance are shown in Table 4-1.

Recreation

This alternative would allow more impact to occur in the Planning Area outside the proposed Lesser Prairie-chicken ACEC boundaries. Management of the Planning Area under this alternative would have less affect on protecting special species habitat outside the ACEC boundaries. Access into the proposed Lesser Prairie-chicken ACEC during mating season would be by special recreation permit. Impacts inside the proposed ACEC boundary would be the same as those in Alternative B.

Recreation in the ACECs would be limited to activities appropriate for extensive recreation management areas (ERMAs).

This alternative would be counter productive to the Bureau's policy of providing unique and quality recreation experiences. Encroachment and intrusions into ACEC boundaries would be expected and could lead to non-monitored illegal activity that could be detrimental to the lesser prairie-chicken and sand dune lizard habitat. As described in Alternative B, areas outside the established OHV areas would be managed as rural or natural areas and interpretive signing would be placed in key areas throughout the Planning Area.

Recreation activity outside the proposed ACEC would have no management prescriptions in place to protect future possible habitat for the lesser prairie-chicken or the sand dune lizard.

Off-Highway Vehicle Management

The proposed ACEC boundaries are restrictive to recreation use on public land and do not take into consideration management strategy to reduce or mitigate impacts.

OHV areas outside the ACEC boundaries would remain unchanged, but would not

provide for expansion opportunities. As a result public health and safety would be compromised by not allowing for expansion to meet the need of the recreating public.

Cumulative Effects

OHV use of what is now the Mescalero Sands North Dune OHV Area dates from the late 1940s with the availability of four-wheel drive vehicles. Use in the Area was boosted in the late 1960s with popularity of Volkswagen-base dune buggies. BLM established the Area for OHV use in 1989.

Currently, the public is using the Square Lake region for OHV recreation use.

Impacts to lesser prairie-chicken and sand dune lizard habitat within the proposed ACEC boundaries would be the same as Alternatives A and B. Impacts to lesser prairie-chicken and sand dune lizard habitat outside the proposed ACEC boundaries would be the same as the No Action Alternative.

Special Management Areas

Under this alternative the lesser prairie-chicken ACEC would be established. This ACEC would consist of 4 tracts totaling 362 square miles or approximately 231,680 acres (see Map E-1). The impacts of establishing this ACEC are discussed under other elements within this chapter.

Social and Economic Conditions

Outside the boundaries of the Proposed ACEC but within the Planning Area social and economic trends identified in Chapter 3 would continue for the foreseeable future. The 5-year moratorium on livestock grazing and new oil and gas development in the proposed ACEC south of US Highway 380 would result in noticeable social and economic impacts.

The impacts of a 5-year livestock grazing moratorium on individual grazing allotments have been noted in the Livestock Grazing section of this chapter (See Table 4-13.) No grazing for 5 years effectively puts these operators out of business. This economic impact would not only be felt at the ranch level, but cause losses to other businesses that support ranching. In addition to these impacts already noted, allotment operators would probably note a decline in the value of their permit, limiting their ability to obtain loans. Since the proposed ACEC is located in Chaves and Eddy Counties, these counties would probably notice a decline in property tax revenues from the base properties and livestock.

In the experimental grazing areas around leks, less area would be available to graze, causing increased costs to fence out cattle, supplemental feed, or rent other pastures. These higher costs would take money out of ranch budgets that would normally be spent at other businesses that support ranching. These businesses would also suffer economic losses. The rest of the Planning Area would have impacts similar to the No Action Alternative.

A 5-year moratorium on new oil and gas development (not just new oil and gas leasing) would seriously impact existing rights of lease holders. Therefore, to implement this moratorium, Congressional action would be needed.

Cumulative Effects Summary

Like the other Alternatives, the impacts of implementing Alternative E on specific elements have been documented previously in this chapter. The concept of this alternative is the establishment of the proposed ACEC for lesser prairie-chicken. Some of the issues of the proposal have been discussed previously in this chapter. Limitations of the proposal include:

- BLM planning guidance calls for management of ecosystems on a landscape scale. The proposed ACEC would not meet this requirement. Instead, the proposed ACEC focuses management on one species, ignoring all other special status species occupying the same ecosystem.
- The proposed ACEC and its nomination package provide no management suggestions or guidance for occupied habitat existing outside the boundaries of the proposed ACEC. Therefore, the impacts on the portions of the Planning Area outside the proposed ACEC boundaries would be the same as the No Action Alternative.
- The proposed ACEC and its nomination package neither mentions nor provides for expansion of the species population outside the boundaries of the proposed ACEC. Therefore, the impacts on the portions of the Planning Area outside the proposed ACEC boundaries would be the same as the No Action Alternative.
- Opportunities for expansion of the species, both in population numbers and occupied habitat, would be necessary to avoid listing the lesser prairie-chicken and sand dune lizard as a threatened or endangered species.

Adopting the proposed ACEC as nominated would not provide those opportunities. Therefore, listing either species as threatened or endangered is more likely than Alternatives A, B or C. Under this alternative, less habitat would be protected from surface disturbing activities.

- In the moratorium area and experimental grazing around lek areas, there would be more ground cover or standing biomass, resulting in improved watershed functions in these areas but speed of recovery of vegetation as a result of eliminating livestock grazing in the moratorium area would be largely dependant on precipitation. The rest of the Planning Area would have impacts similar to the No Action Alternative.
- Taken as a whole, implementing Alternative E would produce the largest degree of negative impacts within the Planning Area and the surrounding to the local economy. Implementing Alternative E would not set in place the management prescriptions over an area large enough area to avoid listing the lesser prairie-chicken or the sand dune lizard as threatened or endangered species. Therefore, this alternative does not meet the Purpose and Need described in Chapter 1.

5-Consultation and Coordination



CHAPTER 5

CONSULTATION AND COORDINATION

INTRODUCTION

During the planning process for this Resource Management Plan Amendment (RMPA)/ Environmental Impact Statement (EIS), formal and informal efforts were made by the Bureau of Land Management (BLM) to involve other Federal agencies, State and local governments, and the public. BLM initiated the planning process in November 2004 by requesting comments to determine the scope of issues and concerns that needed to be addressed during the studies and in the document. As part of the resource inventory, members of the interdisciplinary team formally and informally contacted various relevant agencies to request data to supplement BLM's existing resource database. The sections of this chapter describe these efforts including the consultation required, how this RMPA/EIS is consistent with other finalized plans, public participation activities throughout the process, and public review of the Draft RMPA/EIS.

CONSULTATION AND COORDINATION

Coordination with other agencies was accomplished through communications, meetings, and other cooperative efforts between the interdisciplinary team and involved Federal, State, and local agencies and organizations. Cooperating agencies for this EIS are the New Mexico Department of Agriculture, New Mexico Department of Game and Fish (NMDGF), New Mexico State Land Office, Chaves County, Eddy County and Lea County.

Consultation with the U.S. Fish and Wildlife Service (USFWS) is required by the Fish and Wildlife Coordination Act (16 USC Sec. 661 et seq.) and Endangered Species Act of 1973 (16 USC Sec 1531 et seq.) prior to initiation of any project by BLM that may affect any Federally-listed special status species or its designated critical habitat in accordance with Section 7 of the Endangered Species Act of 1973. This RMPA/EIS is considered a major planning effort, and consultation was initiated. As part of data collection, BLM requested and the USFWS provided a list of Federally-listed species that may occur in Chaves, Eddy, Lea, and Roosevelt Counties. This letter is on file in the BLM Pecos District Office. The Biological Assessment was completed and is located in Appendix 10 of this RMPA. The Biological Assessment and associated correspondence will be on file at the BLM Pecos District Office.

The NMDGF and the New Mexico Natural Resources Department also have been contacted in regard to State-listed threatened and endangered plant and animal species. This is consistent with legislation protecting State-listed species. Coordination and consultation with the State will continue throughout the planning process and during implementation of the RMPA.

In 2004, BLM contacted the Mescalero Apache Tribe, Apache Tribe of Oklahoma, Kiowa Tribe, and Comanche Tribe to notify them that an RMPA/EIS was being prepared for the Special Status Species Amendment. BLM provided information about the Plan for developing the cultural resource components of the RMPA/EIS, and requested that the tribe identify any

traditional cultural places and resources that should be considered, as the Plan was prepared. BLM also offered the tribes an opportunity to assist in preparation of the RMPA/EIS. These tribes and the Ysleta del Sur Pueblo were contacted again in 2005.

CONSISTENCY WITH OTHER PLANS

BLM planning regulations require that RMPs be "consistent with officially approved or adopted resource-related plans, and the policies and procedures contained therein, of other Federal agencies, State and local governments, and Indian tribes, so long as the guidance and RMPs also are consistent with the purposes, policies and programs of Federal laws and regulations applicable to public lands" (43 CFR 1610.3-2). In order to ensure such consistency, finalized plans were solicited from Federal, State, and local agencies as well as Tribal governments listed in Table 5-2.

These same agencies received copies of the Draft RMPA/EIS for review and comment. Section 202 of the FLPMA requires the BLM to coordinate land use planning activities with other Federal agencies, State and local governments, and Indian tribes. FLPMA also requires BLM to ensure that consideration is given to non-BLM plans that are pertinent to the development of the RMPA, assist in resolving inconsistencies between Federal and non-Federal government plans, and to provide for meaningful public involvement of other Federal agencies, State and local government officials, and Indian tribes in the development of the RMPA. There are no known inconsistencies between any of the alternatives and officially approved and adopted resource-related plans of other Federal agencies, State and local

governments, and Indian tribes. Coordination and consultation will continue throughout the planning process and implementation of the RMPA.

PUBLIC PARTICIPATION

Identification of Issues

The public participation process for the RMPA/EIS has been ongoing throughout the development of the RMPA/EIS and will continue to the Record of Decision. In addition to formal public participation activities, informal contacts occur frequently with public land users, industry, and interested persons through meetings, field trips, telephone calls, or letters. All public participation applicable to the RMPA/EIS has been documented and analyzed as part of the planning process and kept on file in the Pecos District Office.

The RMPA/EIS and scoping process began on November 18, 2004, with the publication in the *Federal Register* of BLM's Notice of Intent to amend the RMP, prepare an EIS, and conduct public scoping meetings. This notice invited the general public as well as Federal, State, and local government agencies to identify issues and submit comments regarding the RMPA/EIS. In addition to the Notice of Intent, the BLM prepared a scoping notice to send to interested parties. The scoping notice included a brief letter from the Pecos District Manager. The notice provided background information, announced the preparation of the RMPA and EIS, explained the planning process, project schedule, agency responsibilities, and announced the public scoping meetings and other public participation opportunities.

The scoping notice was distributed to over 400 agencies, interested organizations, and individuals by early December 2004. The mailing list has been and will continue to be reviewed and updated throughout the RMPA/EIS process. Also, a media release introducing the project and announcing the scoping meetings was prepared and issued on November 24, 2004, by the BLM to local and regional newspapers, television, and radio. Four public scoping meetings were held in January 2005 to obtain input on issues and planning criteria, and determine the scope of the RMPA/EIS. Several displays illustrating or explaining components of the RMPA/EIS were stationed around the meeting room for those in attendance to review. Each meeting began with a presentation by BLM representatives after which comments and questions were received from the public. Table 5-1 summarizes the public meeting attendance.

In addition to the comments received during the meetings, a total of 10 comment forms and letters were submitted to BLM. Scoping ended on February 4, 2005; however, additional comments were accepted after that date. A Summary Scoping Report was issued in April 2005 that described the scoping process and summarized the public comments and issues obtained.

Public Review of the Draft RMPA/EIS

On October 20, 2006, BLM released the Draft RMPA/EIS for a 90-day public review period which closed on January 18, 2007. The document was sent to the entities listed in Table 5-3.

Concurrent with the distribution of the Draft RMPA/EIS, a BLM Notice of Availability was published in the *Federal Register* along with the U.S. Environmental Protection Agency's

Notice of Availability. The RMPA/EIS was prepared by an interdisciplinary team of environmental planning and resource specialists. Table 5-4 is a list of the team members, titles, and responsibility associated with the RMPA/EIS.

BLM hosted five formal public open houses during the 90-day review in an effort to gather public comment and answer questions regarding the Draft RMPA/EIS. See Table 5-2. During the public meetings, BLM staff recorded five oral comments. BLM received 13 comment letters during the 90-day review period.

Comments, including names and street addresses of respondents, are available for public review at the BLM Pecos District Office, 2909 West Second Street, Roswell, New Mexico, 88201, during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except holidays.

Proposed RMPA/Final EIS

All written and oral comments received during the 90-day period were compiled, analyzed, and summarized. The Proposed RMPA/Final EIS (RMPA/FEIS) was prepared and provides responses to the comments received on the Draft RMPA/EIS in Appendix 11. The PRMPA/FEIS contains additional information to support the responses to the comments.

Following the publication of a Notice of Availability in the *Federal Register*, distribution of the RMPA/FEIS, a 60-day Governor's Consistency Review, and a 30-day protest period, the BLM will issue a Record of Decision summarizing the findings and decisions regarding the preferred alternative and its determination regarding compliance with NEPA and other regulations. Also, the RMPA will be prepared to document the

resource management decisions and
complete the BLM's resource

management planning process for the
Special Status Species RMPA.

TABLE 5-1 PUBLIC SCOPING MEETING ATTENDANCE AND COMMENTS		
Meeting Date	Meeting Location	Number in Attendance*
January 11, 2005	Student Union, Eastern New Mexico University, Portales, New Mexico	2
January 13, 2005	Roswell Field Office, Roswell, NM	15
January 18, 2005	Pecos Village Conference Center, Carlsbad, New Mexico	19
January 20, 2005	Hobbs Public Library, Hobbs, New Mexico	9
	Economic Profile System Workshops	
February 9, 2005	Roswell Convention & Civic Center, Roswell, New Mexico	8
February 10, 2005	Pecos Village Conference Center, Carlsbad, New Mexico	17
*Members of the public, not BLM staff.		

TABLE 5-2 PUBLIC MEETING ATTENDANCE		
Meeting Date	Meeting Location	Number in Attendance*
November 9, 2006	Hobbs Public Library, 509 North Shipp Street, Hobbs, NM	1
November 16, 2006	Chaves County Commission Chambers, 1 St. Mary's Place, Roswell, NM	17
November 21, 2006	Carlsbad Public Library, 101 South Halagueno Street, Carlsbad, NM	3
November 28, 2006	Artesia Community Center, 512 North 8 th Street, Artesia, NM	6
November 30, 2006	Midland Center, 105 North Main Street, Midland, TX	4
*Members of the public, not BLM staff		

TABLE 5-3
LIST OF DOCUMENT RECIPIENTS

FEDERAL

Department of Agriculture
Agriculture Research Service
Animal Damage Control
Farm Service Agency
Rural Development Office
Natural Resources Conservation
Service

Department of Commerce

Department of Defense

Department of the Air Force
Cannon AFB

Department of Energy

Waste Isolation Pilot Plant

Department of the Interior

Bureau of Indian Affairs

Bureau of Land Management

Resource Advisory Council

Bureau of Reclamation

Fish and Wildlife Service

National Park Service

Carlsbad Caverns National Park

Natural Resources Library

Office of Environmental Policy and
Compliance

Environmental Protection Agency

NEW MEXICO STATE AGENCIES

Agriculture Department

Agricultural Programs and Resources
Division

Livestock Board

Bureau of Mines and Mineral Resources

Commerce and Industry Department

Department of Finance and Administration

Office of Cultural Affairs

Museum of New Mexico

Historic Preservation Division

Department of Game and Fish

Energy and Minerals Department

Forestry and Resources Conservation
Division

Energy Conservation and Management
Division

Mining and Minerals Division

Oil, Gas, and Minerals Division

Park and Recreation Division

Governor's Office

Environment Department

Environmental Protection Division

Waste and Water Management Division
Surface Water Quality

Highway and Transportation Department

Human Services Department

Office of Indian Affairs

Land Office

Commissioner's Office

New Mexico State University

State Engineer Office/Interstate Stream
Commission

Taxation and Revenue Department

University of New Mexico

**CONGRESSIONAL DELEGATION AND
NEW MEXICO STATE LEGISLATORS**

U.S. Senator Jeff Bingaman

U.S. Senator Pete V. Domenici

U.S. Congressman Steve Pearce

State Senator, District 27

State Senator, District 32

State Senator, District 33

State Senator, District 34

State Senator, District 41

State Senator, District 42

State Representative, District 55

State Representative, District 57

State Representative, District 58

State Representative, District 61

State Representative, District 62

State Representative, District 66

**LOCAL AND REGIONAL
GOVERNMENTS, AGENCIES, AND
INDIAN TRIBES**

Apache Tribe of Oklahoma

Chambers of Commerce for Artesia, Eunice,
Hobbs, Jal, Lovington, Roosevelt
County, Roswell, Roswell Hispano,
Tatum

Chaves County Commissioners

Public Land Advisory Committee

Cities of Artesia, Carlsbad, Eunice, Hobbs,
Jal, Lovington, Portales, Roswell, Tatum

Comanche Indian Tribe

Eddy County Commissioners

Lea County Commissioners

Kiowa Tribe

Mescalero Apache Tribe

Roosevelt County Commissioners

Soil and Water Conservation Districts
Chaves, Border, Hagerman-Dexter,
Lea, Roosevelt, Carlsbad, Central
Valley, Penasco
Towns of Dexter, Hagerman
Ysleta del Sur Pueblo

OTHER GROUPS/INDIVIDUALS

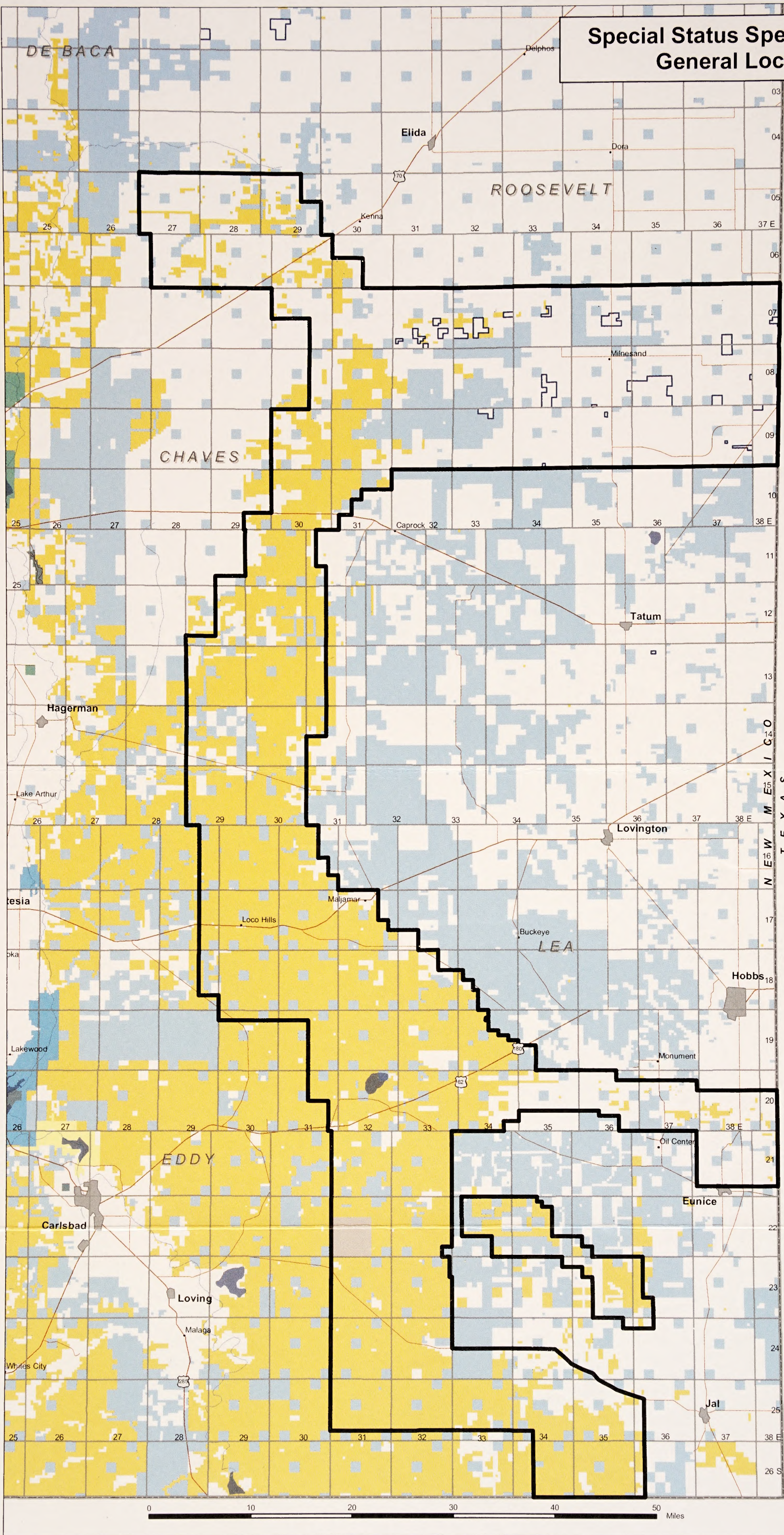
Audubon – New Mexico
BLM Grazing Permittees
BLM Mineral Lease Holders
Central Valley Electric Cooperative
Chihuahuan Desert Conservation Alliance
Desert Roughriders
Forest Guardians
Independent Petroleum Association of
New Mexico
Lea County Electric Cooperative
New Mexico Cattle Growers Association
New Mexico Farm & Livestock Bureau
New Mexico Natural History Institute
New Mexico Off Highway Vehicle Alliance
New Mexico Oil and Gas Association
New Mexico Public Lands Council
New Mexico Wilderness Alliance
Quail Unlimited
Quivira Coalition
Roosevelt County Electric Cooperative
Sierra Club – New Mexico
Southwest Center for Biological Diversity
T&E, Inc.
The Nature Conservancy
Western Land Exchange Project
Wildlife Management Institute

TABLE 5-4 LIST OF PREPARERS AND REVIEWERS			
NAME	RMPA ROLE/ RESPONSIBILITY	EDUCATION	EXPERIENCE
PECOS DISTRICT/ROSWELL FIELD OFFICE			
Howard Parman	Team Leader, Planning Coordinator	BS Forestry, Oklahoma State University	29 years with BLM in Forestry, Public Affairs & Planning
Janet Graham	Geographic Information System	BS Physical Education, Eastern New Mexico Univ.	24 years with BLM in GIS
Pat Flanary	Cultural Resources	BA Anthropology, Southern Methodist University	17 years with BLM in Archeology
Jerry Dutchover	Solid Minerals	BS Geology, New Mexico State University	24 years with BLM in Fluid & Solid Minerals
Al Collar	Fluid Minerals/Salable Minerals	BS Geology Arkansas Tech University	25 years with BLM in Fluid Minerals, Solid Minerals, HazMat, Safety and IT. 2 years with DOD in HazMat.
Bill Murry	Recreation/Visual Resources	2 years Colorado Northwestern Community College	16 years with BLM, Park Manager & Outdoor Recreation Planner
Michael McGee	Soil, Water, Air	BS Geology, New Mexico State University	13 years with BLM in Fluid Minerals, Solid Minerals, and Soil/Water/Air
Irene Gonzales	Lands/Access	BLM Lands School (Realty)	BLM- 30 years, 26 years in Lands program
Doug Burger	Pecos District Manager	BS Wildlife & Range Texas Tech	27 years with BLM, 17 yrs in Management
PECOS DISTRICT/CARLSBAD FIELD OFFICE			
Steve Daly	Range Management Vegetation Noxious Weeds	BS Wildlife Science New Mexico State University	BLM - 24 years in Range & Soil/Water/Air
Steve Bird	Wildlife/ Threatened & Endangered Species	BS Wildlife Science New Mexico State University	5 years with BLM
Ty Allen	Wildlife/ Threatened & Endangered Species	BS Biology Texas Christian University MS Biology Sul Ross State University	3 years with BLM
LAS CRUCES DISTRICT OFFICE			
Rena Gutierrez	Writer/Editor (Zone)	B.A., Journalism & Mass Communications, New Mexico State University	BLM – 29 years

Maps



Special Status Species Amendment General Location Map 1-1



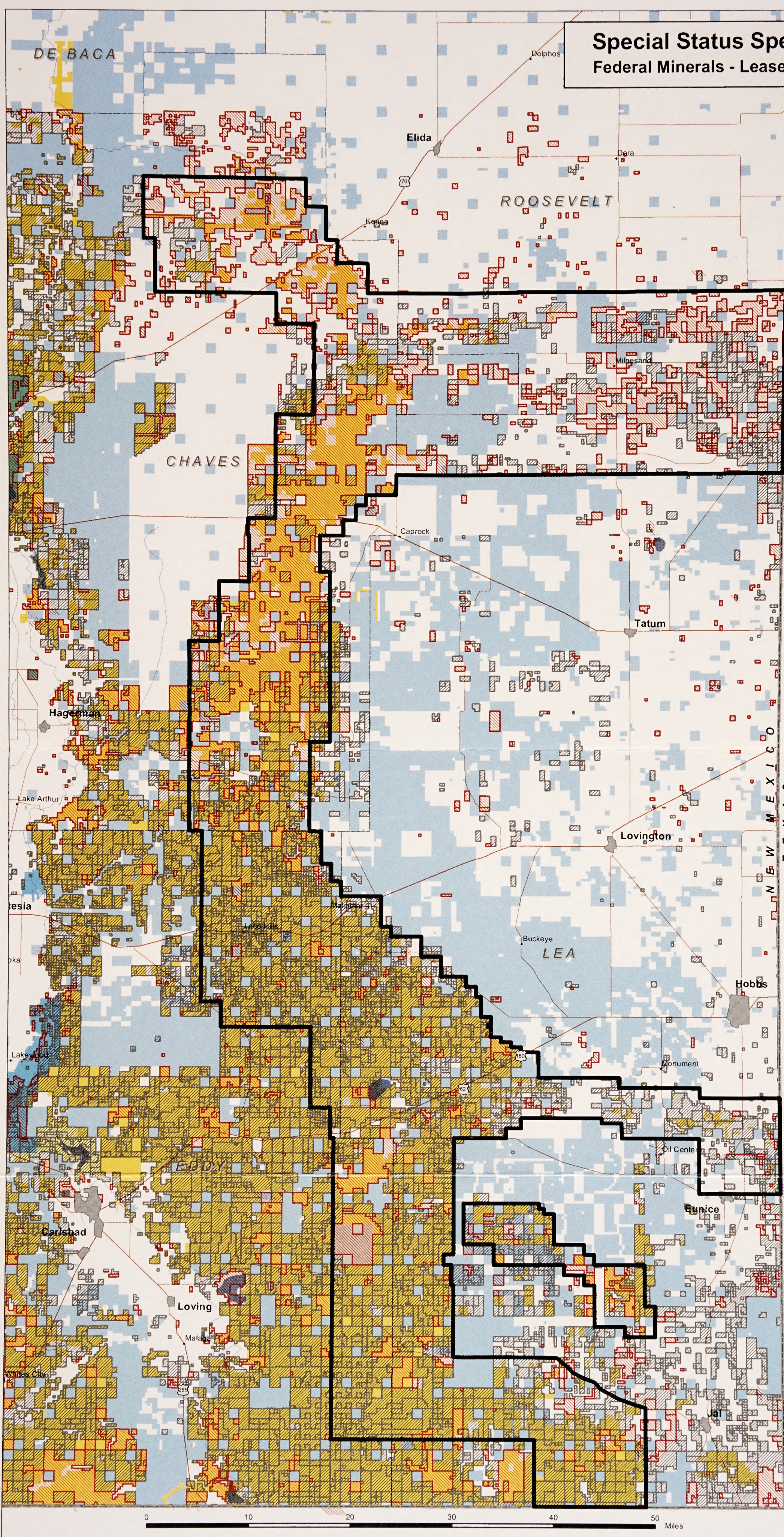
- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park

- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village
- RMP Amendment Area
- State Lesser Prairie Chicken Area (PCA)



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by BLM. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
Produced by the RFO GIS Specialist on Jan. 18, 2005.

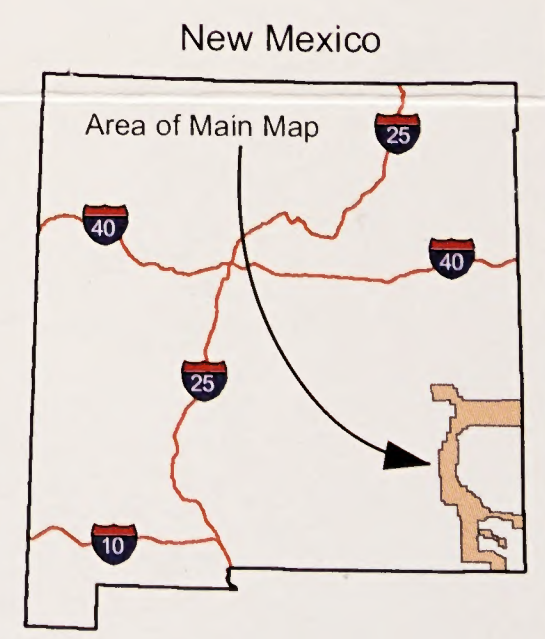
Special Status Species Amendment Federal Minerals - Leased & Unleased - Map 2-1



- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park

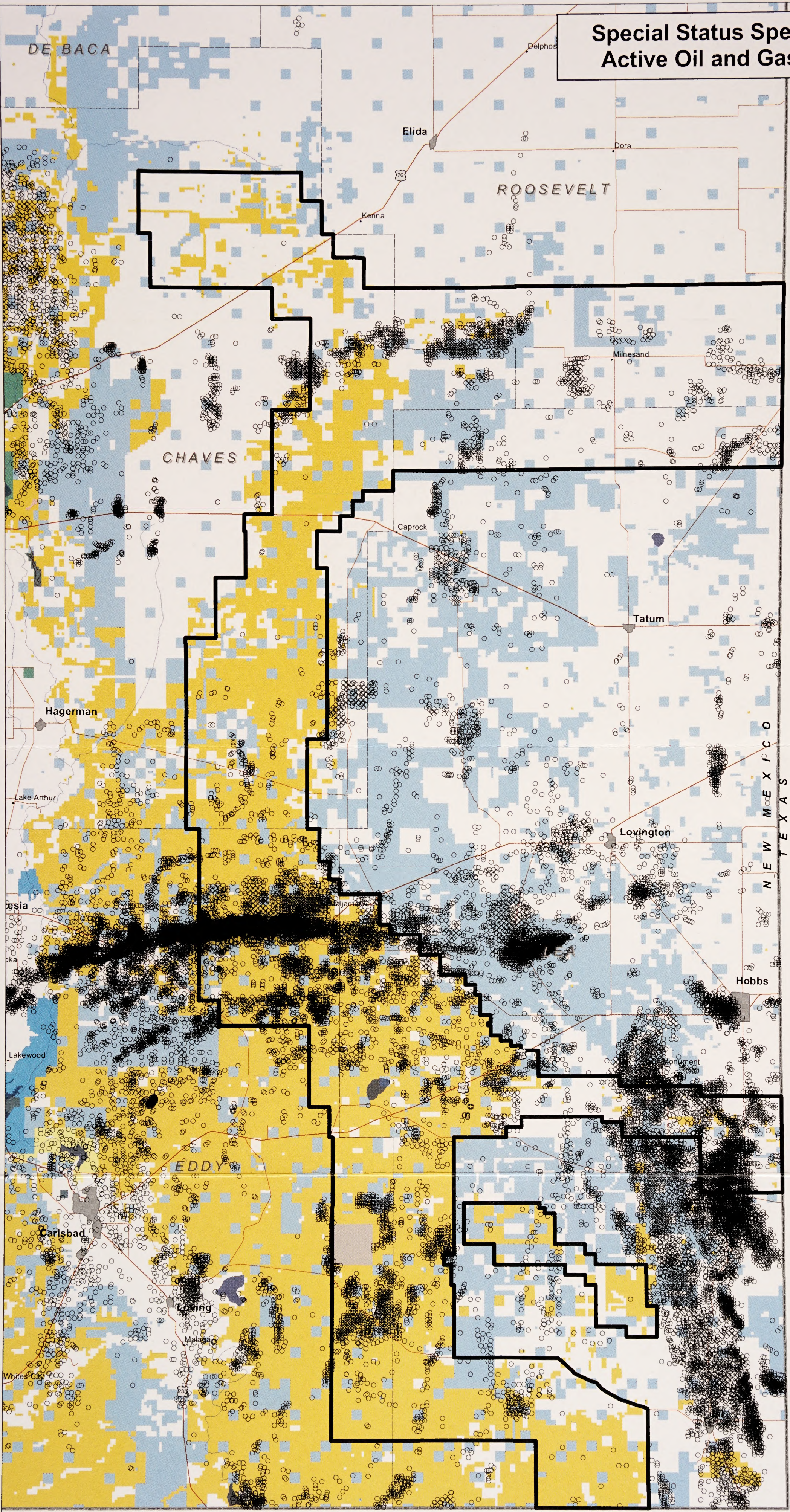
- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village
- RMP Amendment Area

- Unleased Federal Mineral Estate
- BLM Lease



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Produced by the RFO GIS Specialist on Jan. 13, 2005.

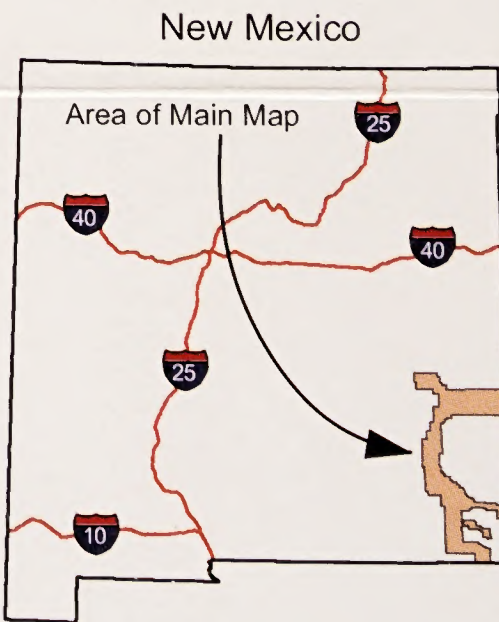
Special Status Species Amendment Active Oil and Gas Wells - Map 2-2



- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park

- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village

RMP Amendment Area



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by BLM. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.

Produced by the RFO GIS Specialist on Nov. 8, 2004.

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Special Status Species Amendment

Secretary's Order for the Potash Area - WIPP - Map 2-3

- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park

- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village

RMP Amendment Area

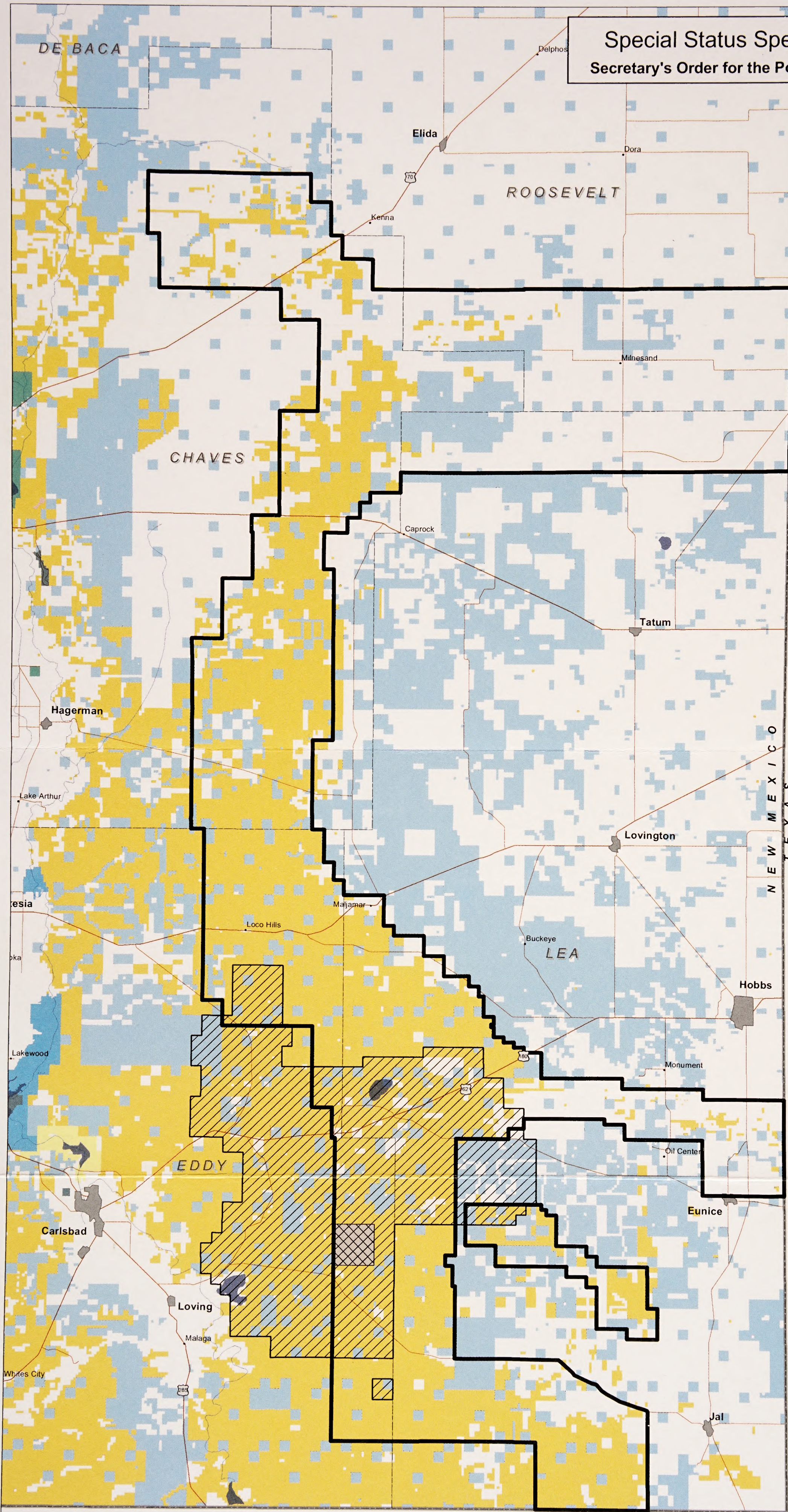
WIPP Area

Secretary's Order for the Potash Area



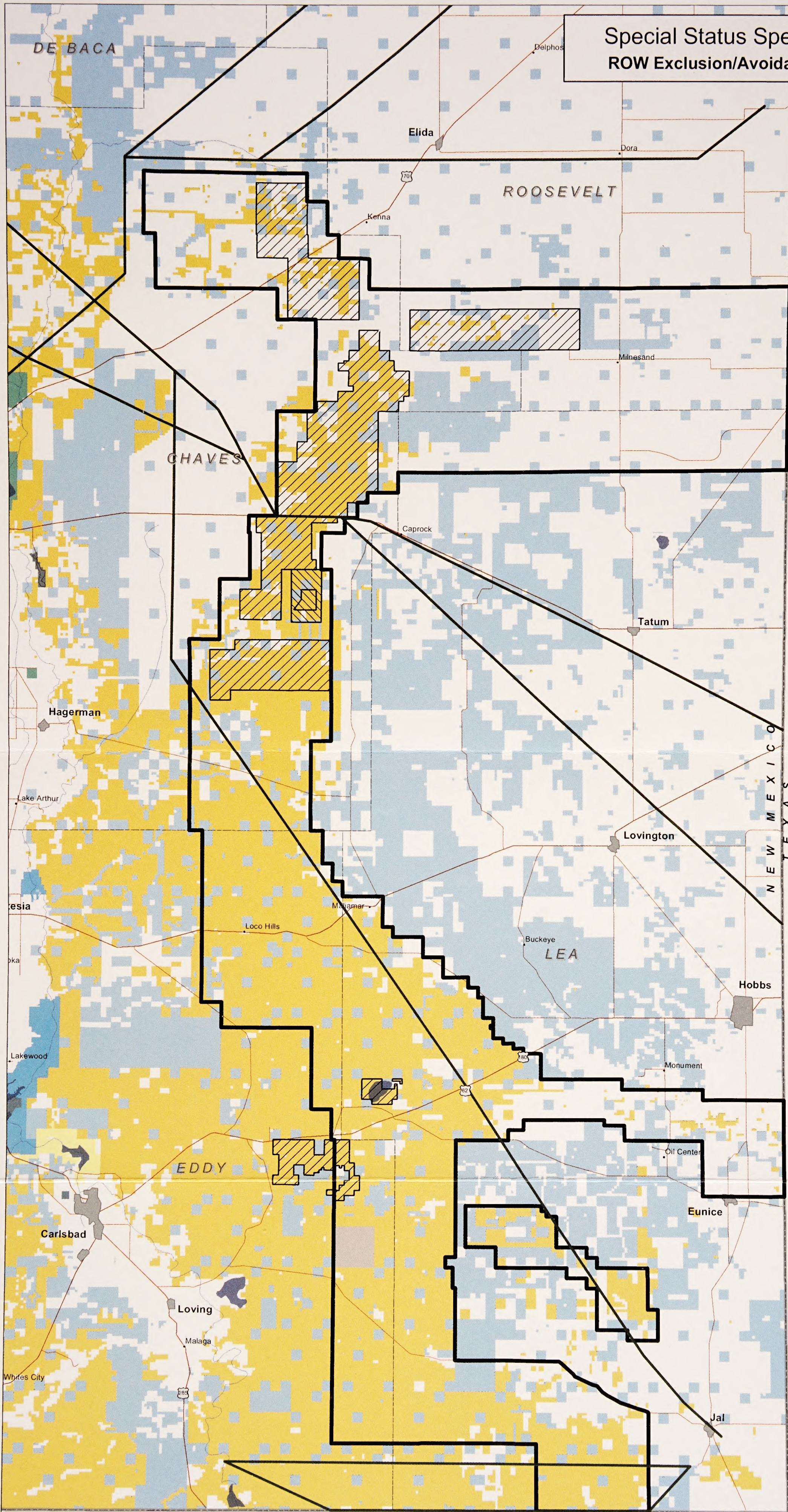
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by BLM. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.

Produced by the RFO GIS Specialist on Jan. 14, 2005.



0 10 20 30 40 50 Miles

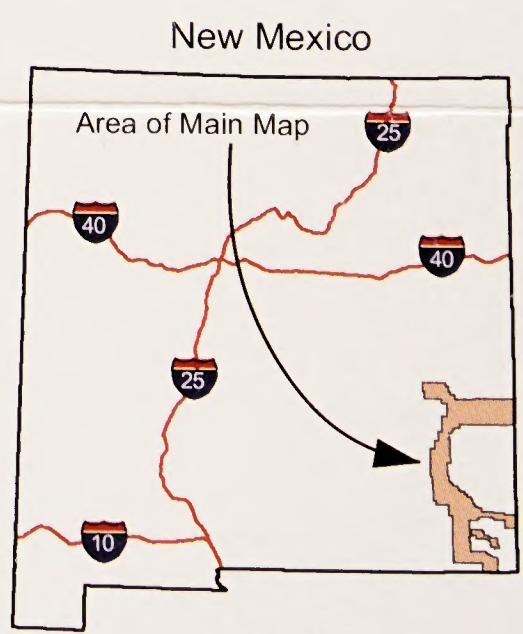
Special Status Species Amendment
ROW Exclusion/Avoidance Areas - Map 3-1



- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park

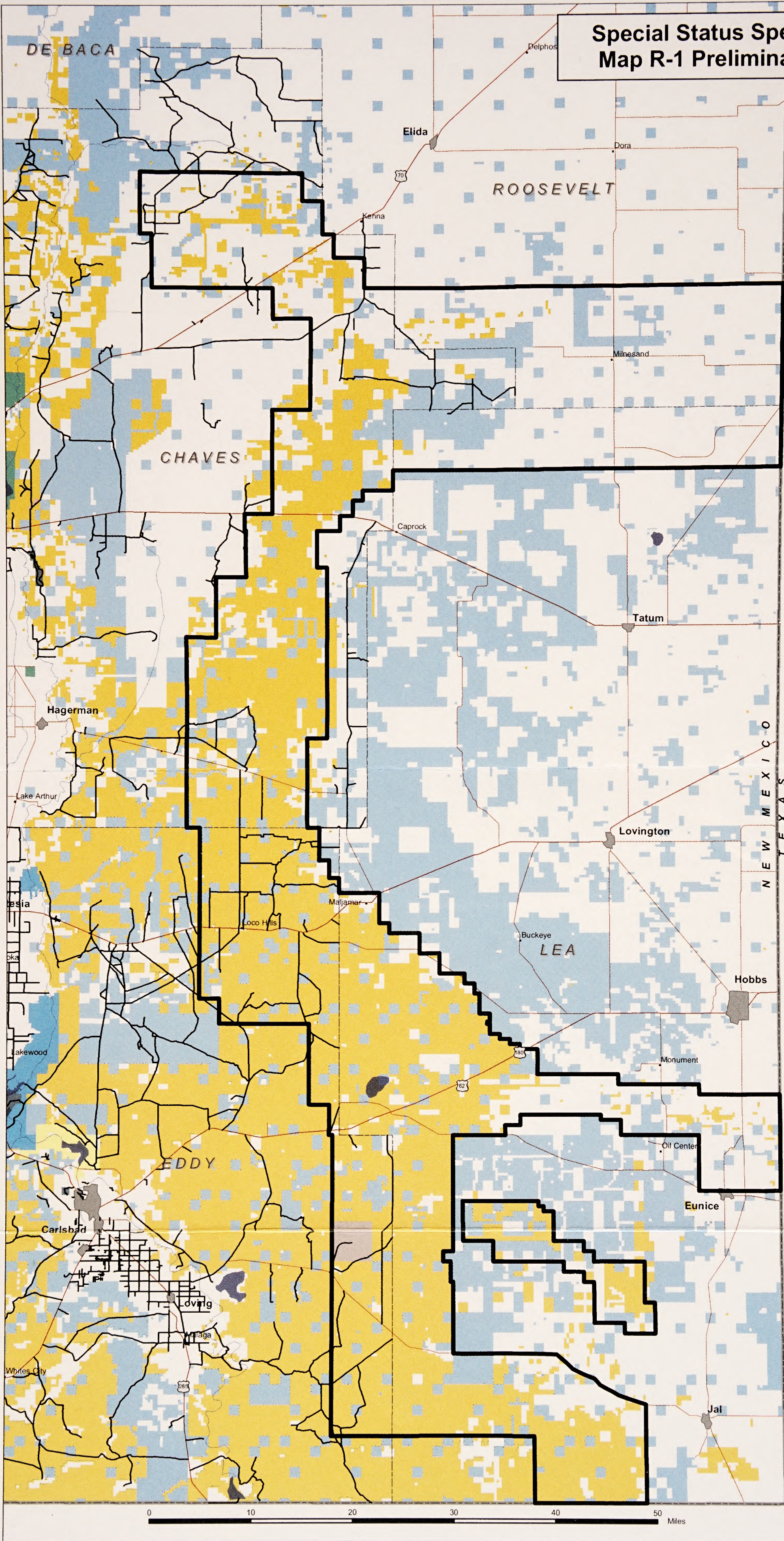
- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village
- RMP Amendment Area

- ROW Exclusion
- Avoidance Areas
- ROW Corridors



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Produced by the RFO GIS Specialist on Jan. 18, 2005.

Special Status Species Amendment Map R-1 Preliminary Road Network

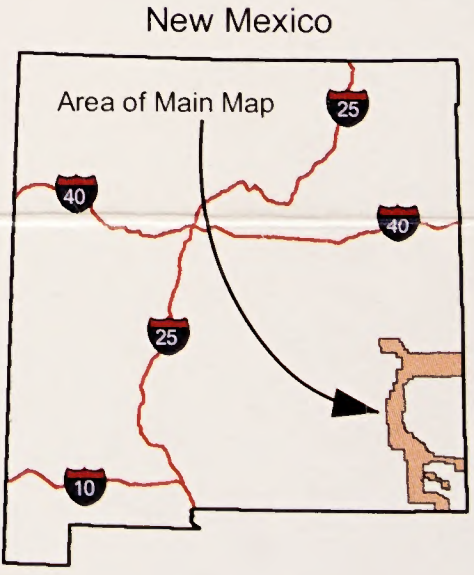


- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park

- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village

- RMP Amendment Area
- E-911 County Roads

DISCLAIMER:
This map displays preliminary road data. It does not show all roads either in the Planning area or in the surrounding area.



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Special Status Species Amendment Map U-1 Interstate Utility Corridors

- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park

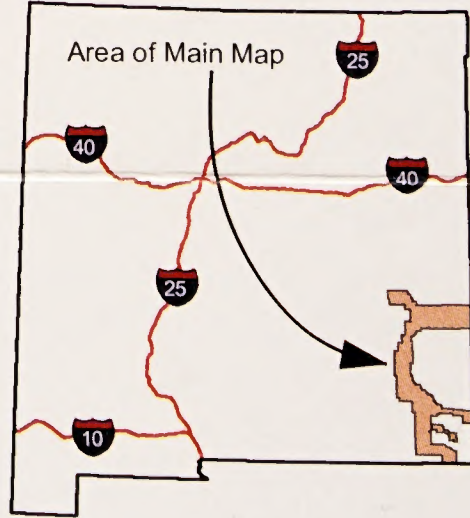
- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village

- RMP Amendment Area
- Pipeline Utility Corridors
- Electric Utility Corridors
- Electric or Pipeline Utility Corridors
- Lizard Habitat Area

- Core Management Area
- Habitat Evaluation Areas
- OHV Areas
- CFO Special Mgmt Areas
- Mescalero Sands ACEC



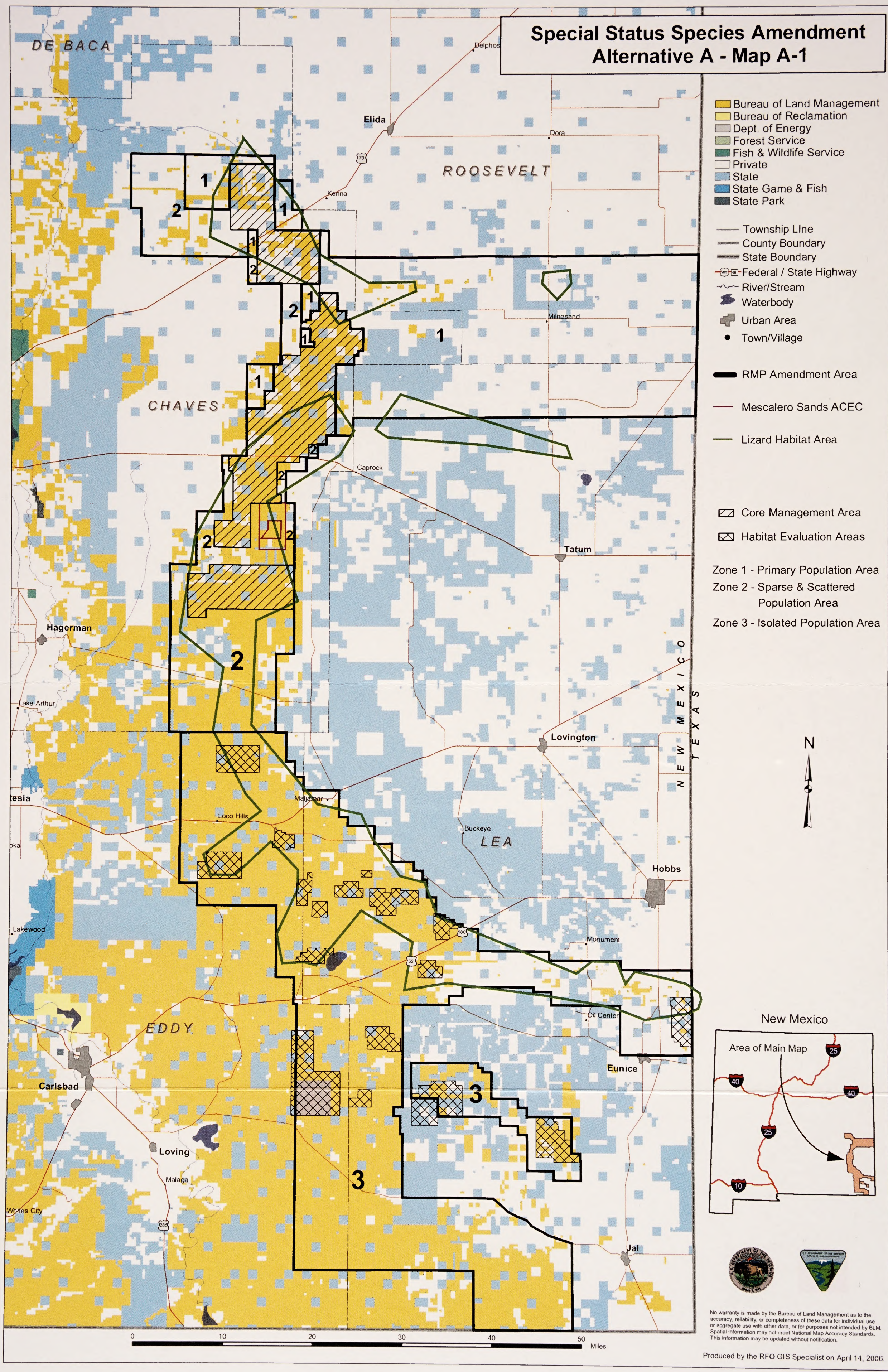
New Mexico



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Produced by the RFO GIS Specialist on Oct. 19, 2005.

Special Status Species Amendment Alternative A - Map A-1



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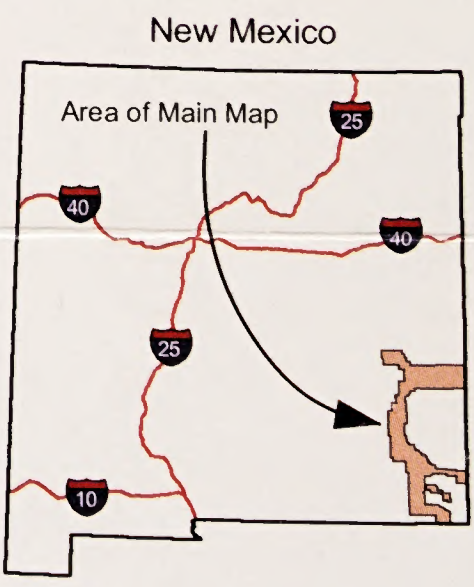
Special Status Species Amendment Alternative A OHV Designations Map A-2

- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park

- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village

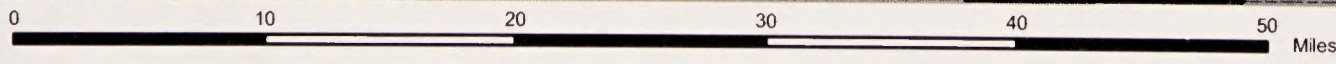
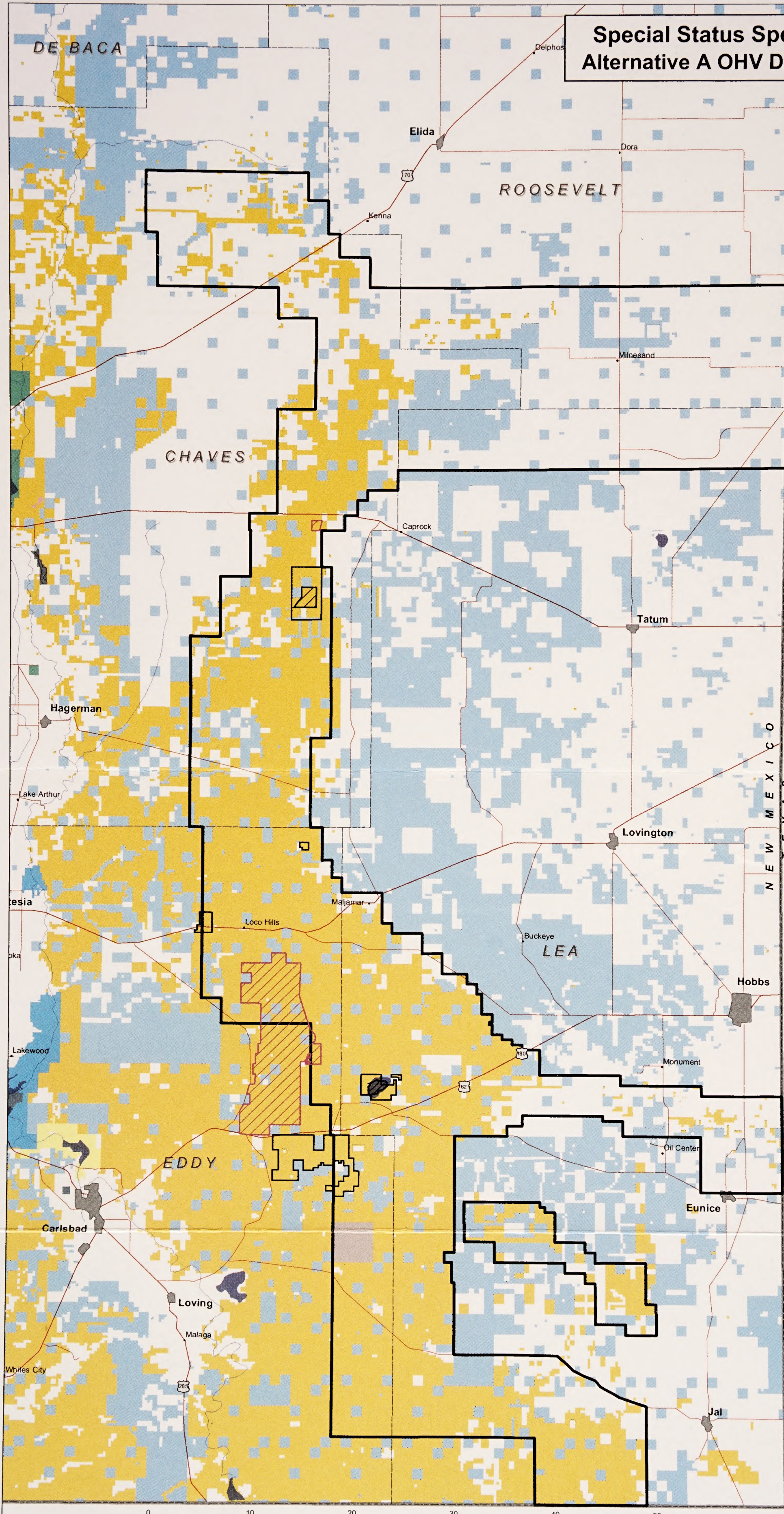
RMP Amendment Area

- Open
- Limited
- Closed

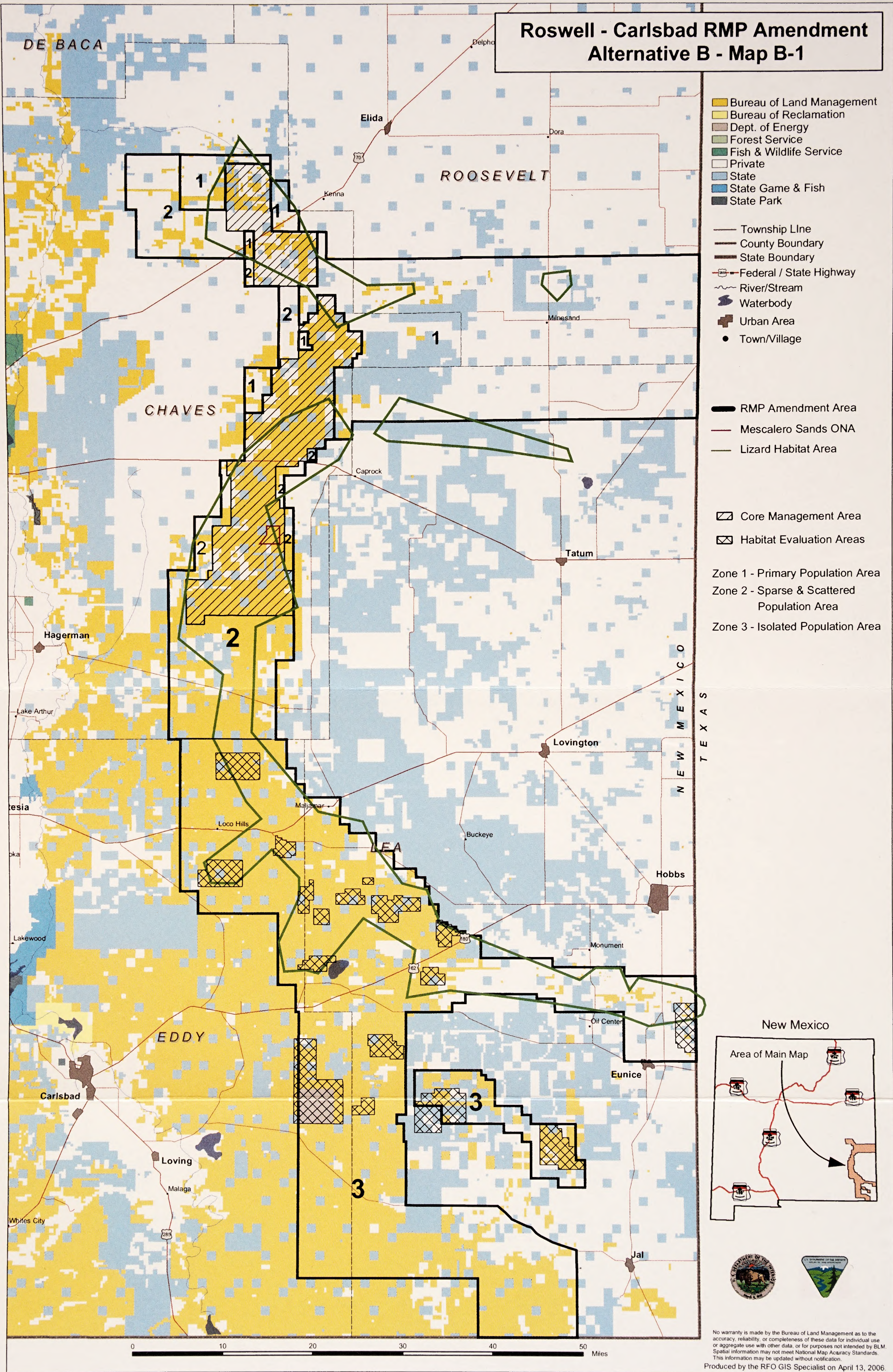


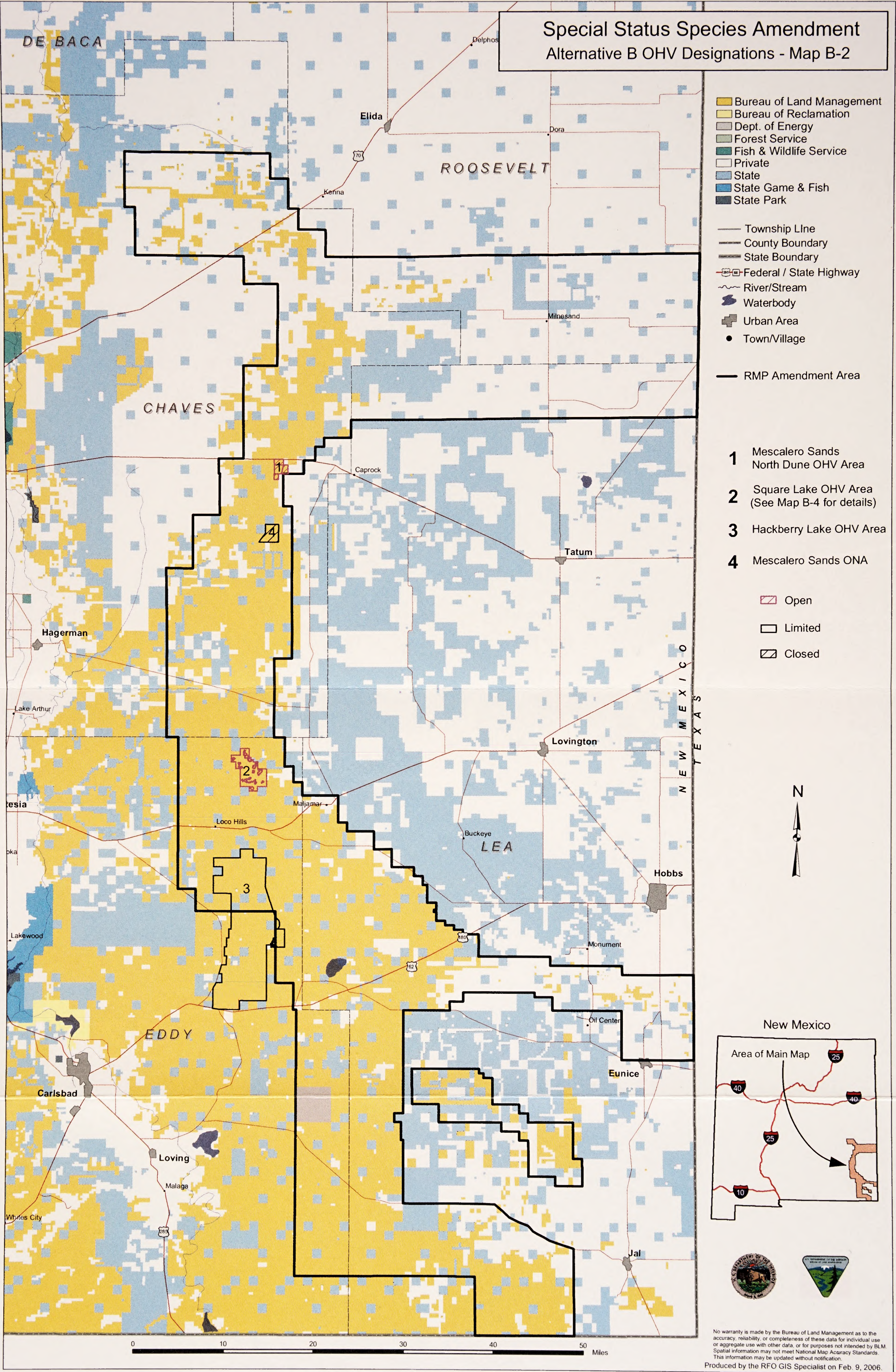
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Produced by the RFO GIS Specialist on Feb. 9, 2006.



Roswell - Carlsbad RMP Amendment
Alternative B - Map B-1





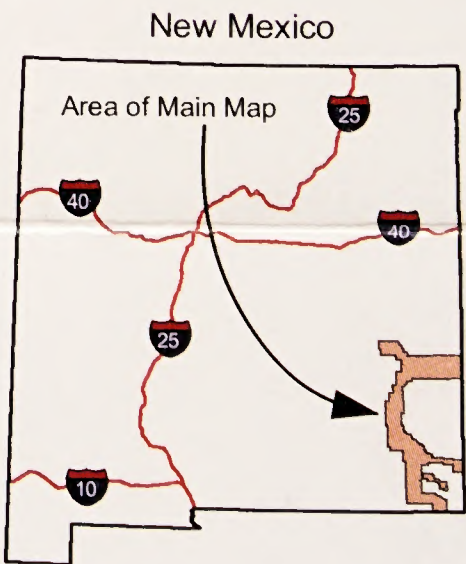
Special Status Species Amendment
Alternative B OHV Designations - Map B-2

- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park

- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village
- RMP Amendment Area

- 1 Mescalero Sands North Dune OHV Area
- 2 Square Lake OHV Area (See Map B-4 for details)
- 3 Hackberry Lake OHV Area
- 4 Mescalero Sands ONA

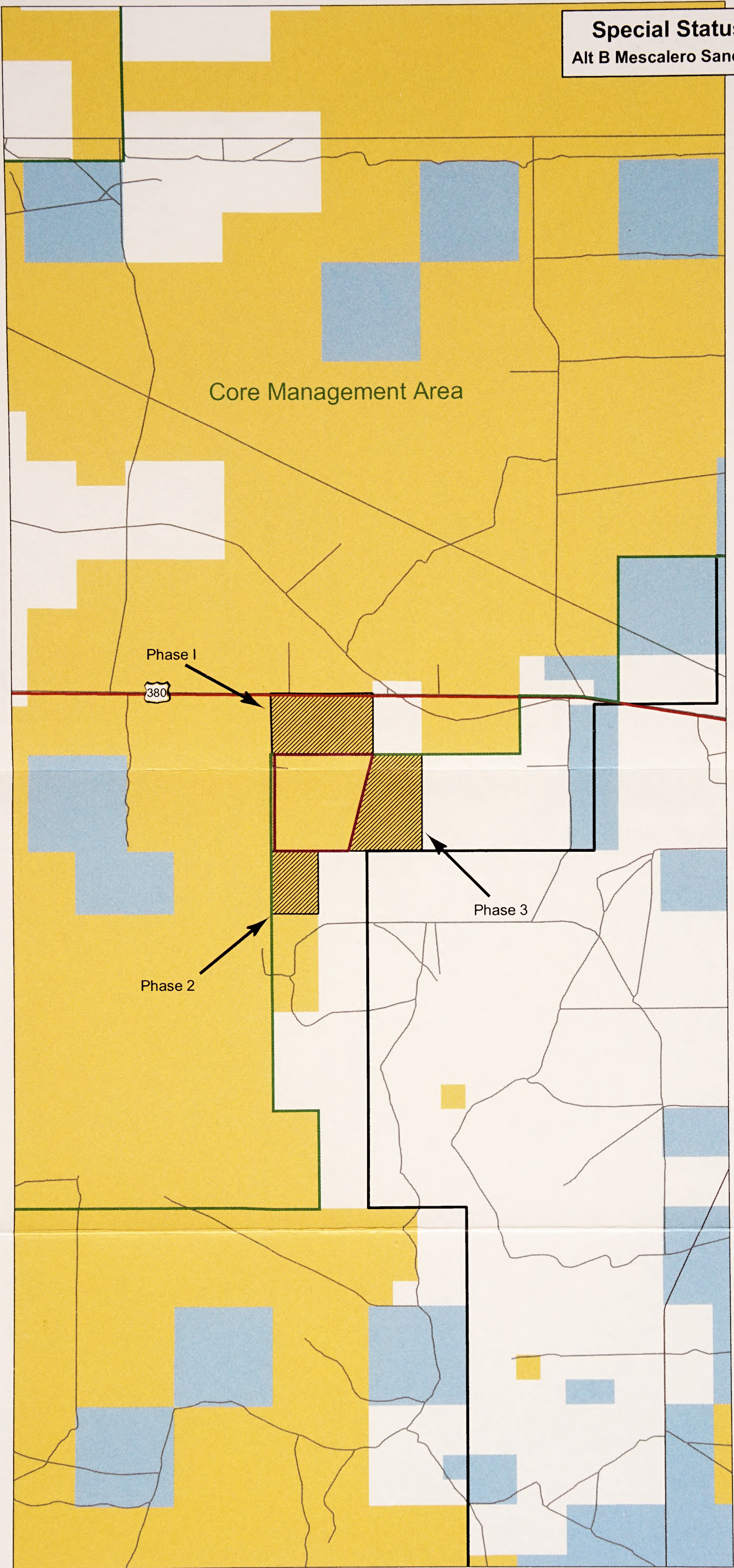
- Open
- Limited
- Closed



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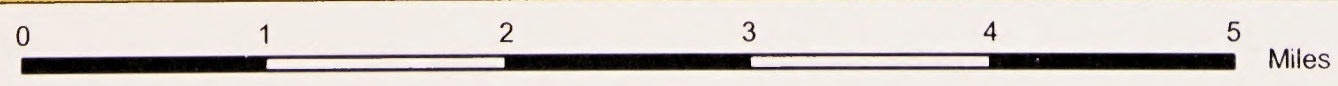
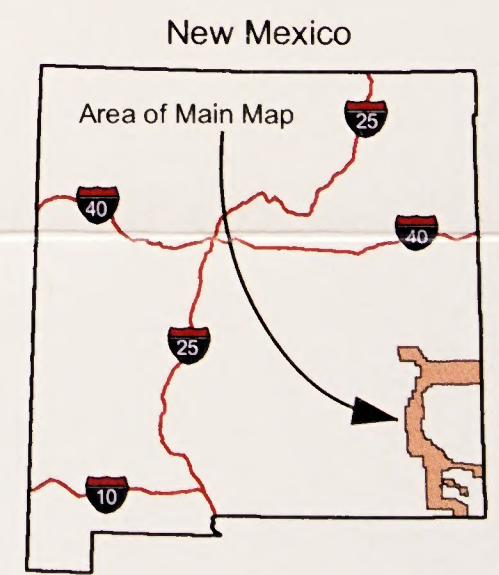
Special Status Species Amendment

Alt B Mescalero Sands OHV Expansion Area Map B-3



- Bureau of Land Management
- Private
- State
- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village
- RMP Amendment Area
- Core Management Area
- Roads

- Mescalero Sands OHV Area
Open to OHV use
- Phase Expansion Area
 - Phase 1 - Limited to roads and trails
 - Phase 2 - Open to OHV use
 - Phase 3 - Open to OHV use



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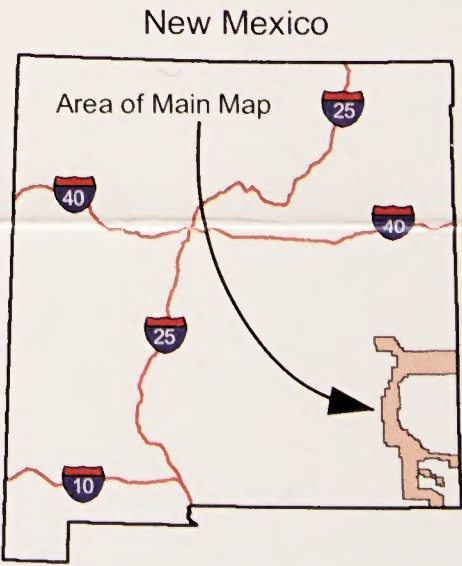
Special Status Species Amendment Alternative B Square Lakes OHV Area Map B-4

- Bureau of Land Management
- Private
- State

- Township Line
- County Boundary
- State Boundary
- 2540 Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village

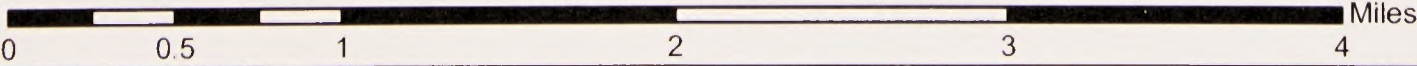
- RMP Amendment Area
- Roads

- Square lake OHV Area
Open for OHV Use
- Square lake OHV Area
Limited roads and trails



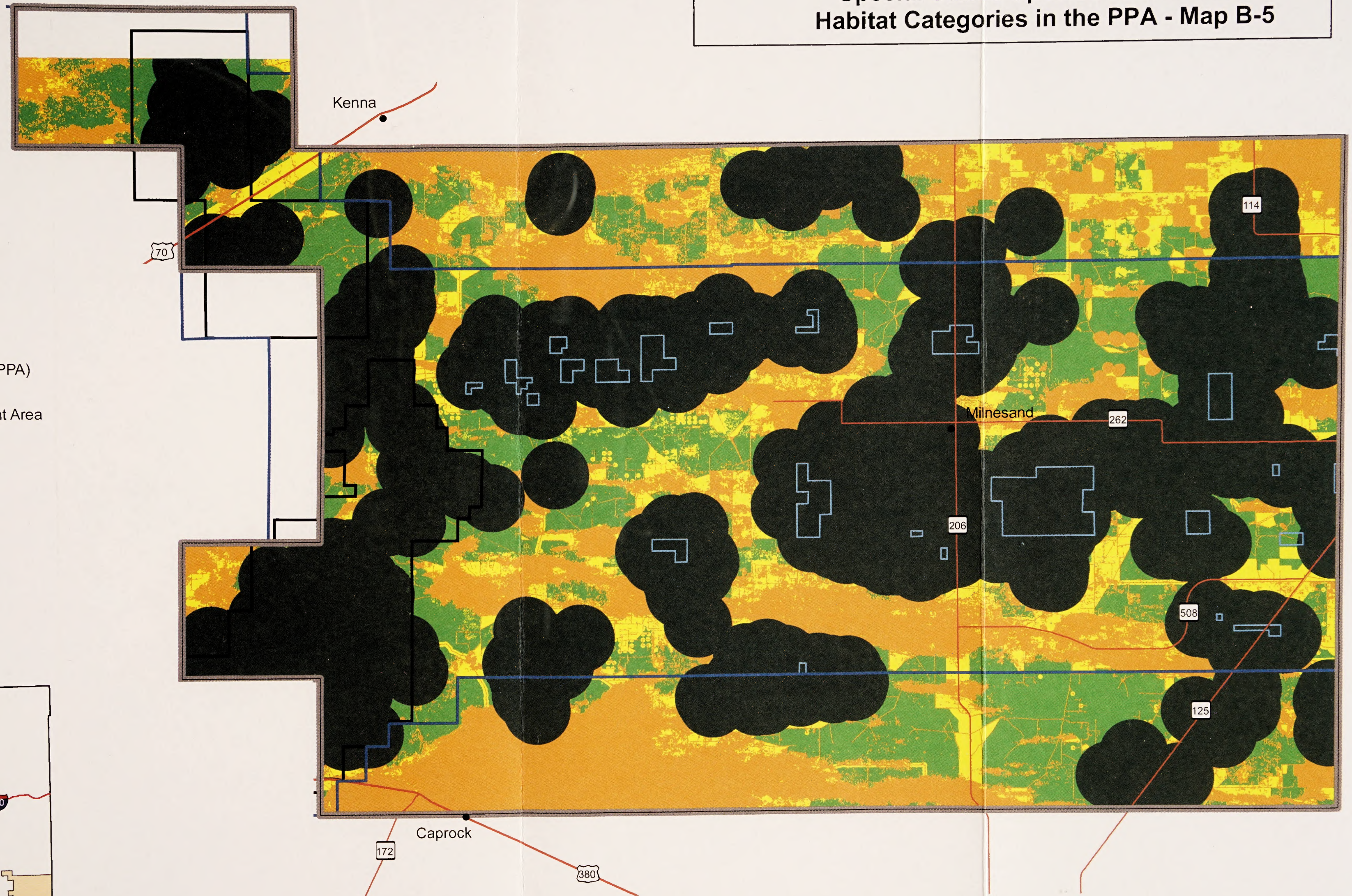
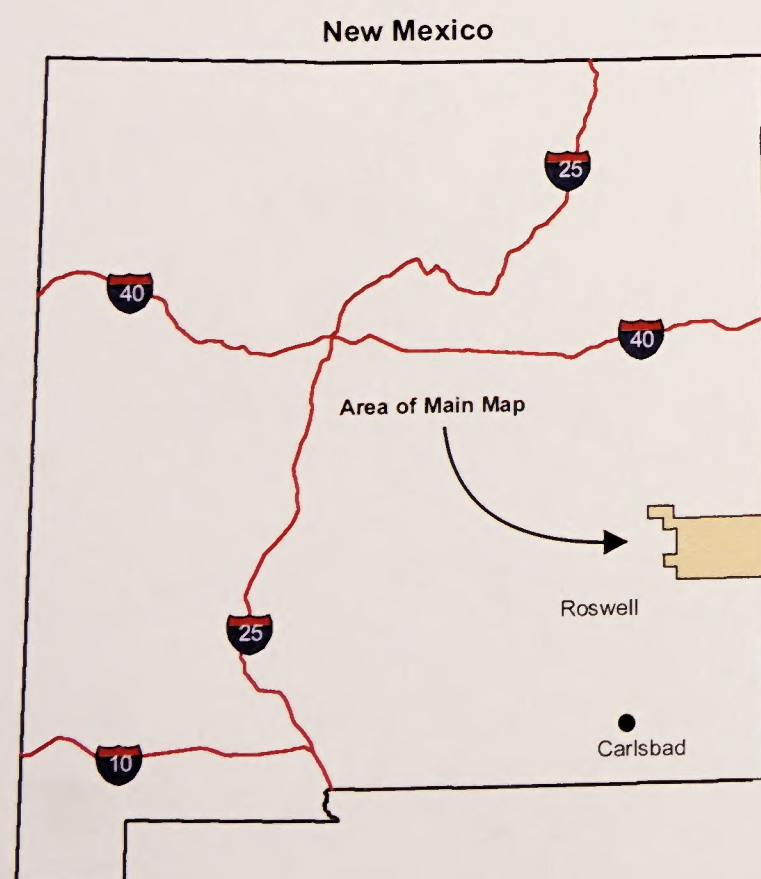
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Produced by the RFO GIS Specialist on April 12, 2005.



Special Status Species Amendment Habitat Categories in the PPA - Map B-5

-  Occupied
-  Suitable
-  Potentially Suitable
-  Not Suitable
-  Primary Population Area (PPA)
-  Roswell Core Management Area
-  State PCA
-  U.S. Highway
-  State Highway
-  Town
-  RMP Plan Area



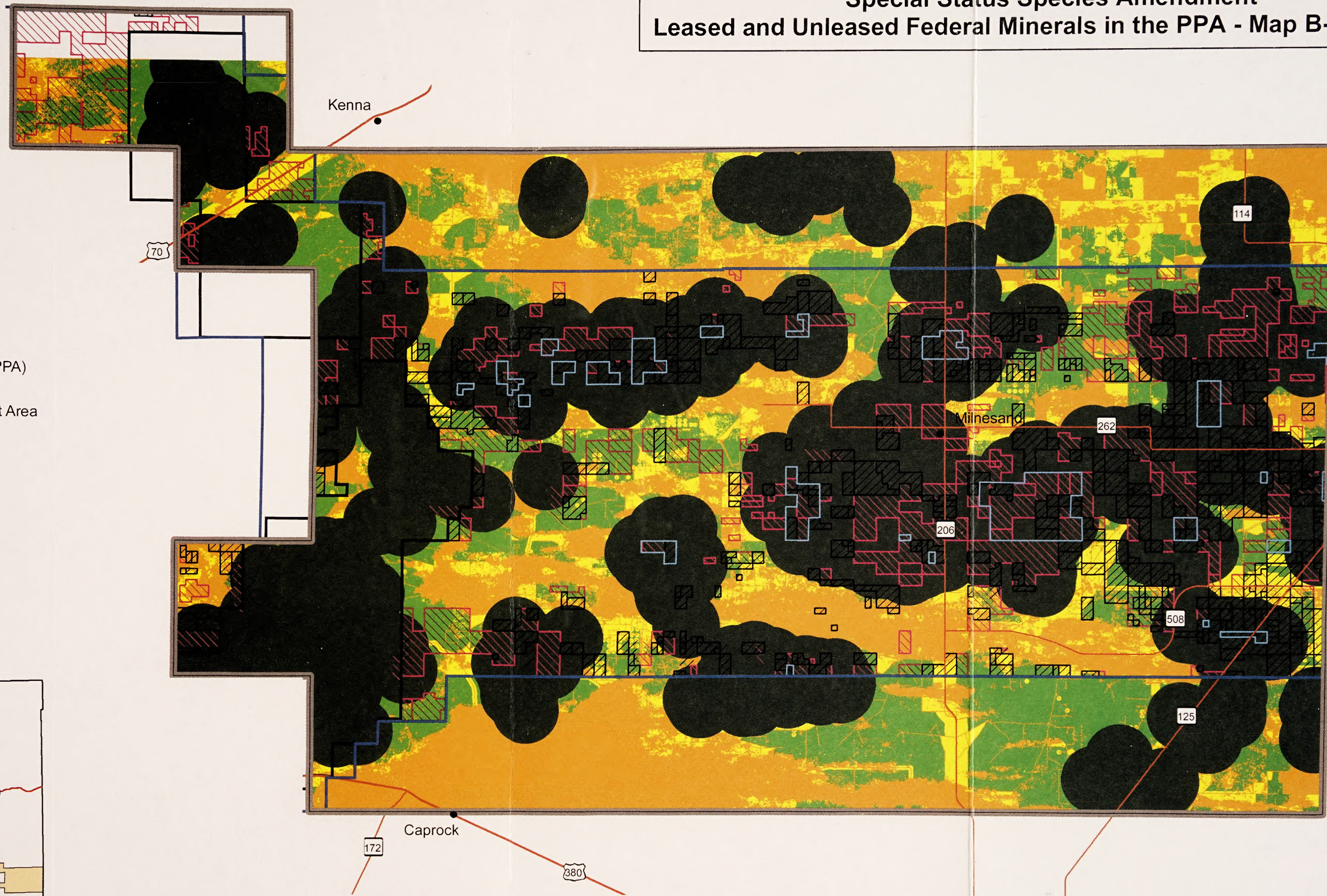
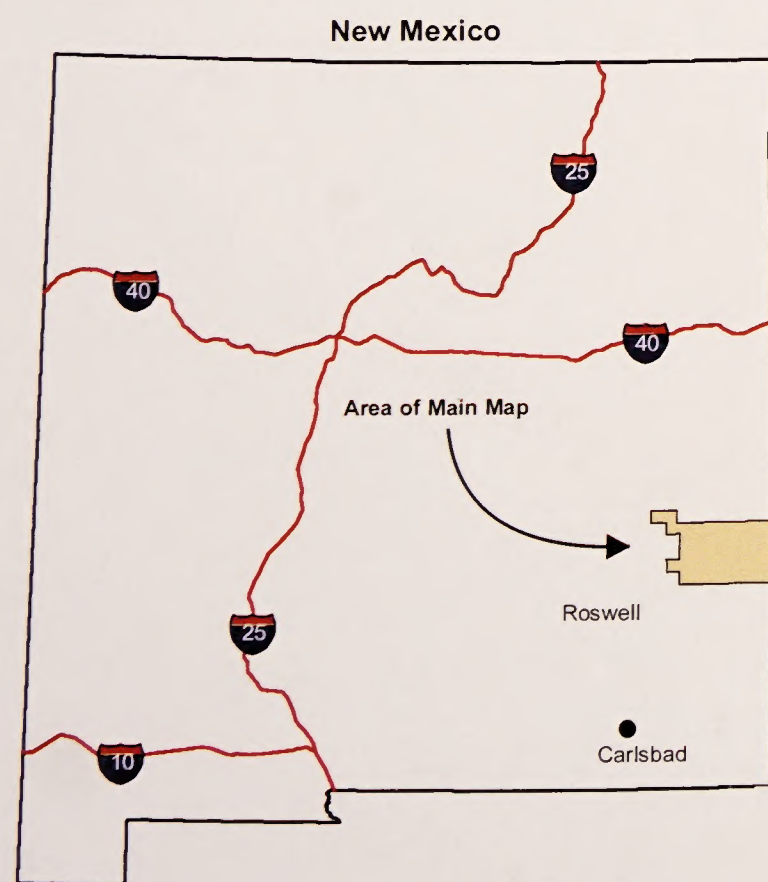
No warranty is made by the LPC, SDL Conservation Strategy Working Group as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the Working Group. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.

Produced by the NMSO and RFO GIS Specialists, Oct. 05



Special Status Species Amendment Leased and Unleased Federal Minerals in the PPA - Map B-5a

- Occupied
- Suitable
- Potentially Suitable
- Not Suitable
- Primary Population Area (PPA)
- Roswell Core Management Area
- State PCA
- U.S. Highway
- State Highway
- Town
- RMP Plan Area



Unleased Oil and Gas Leased Oil and Gas

No warranty is made by the LPC SDL Conservation Strategy Working Group as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the Working Group. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.

**Special Status Species Amendment
Alternative C - Map - C1**

Legend:

- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park
- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village
- RMP Amendment Area
- Minerals Management Zone
- State Lesser Prairie Chicken Area (PCA)
- Lizard Habitat Boundary
- Unleased Federal Mineral Estate

Zone 1 - No New Oil & Gas Leasing

Zone 2 - New Leasing with no surface occupancy requirements

Zone 3 - New Leasing with a plan of development requirements

Zone 4 - New Leasing according to current management prescriptions

Scale: 0 10 20 30 40 50 Miles

Inset Map: New Mexico

Area of Main Map: [Indicated by a red box on the inset map]

Logos: Bureau of Land Management, U.S. Department of the Interior

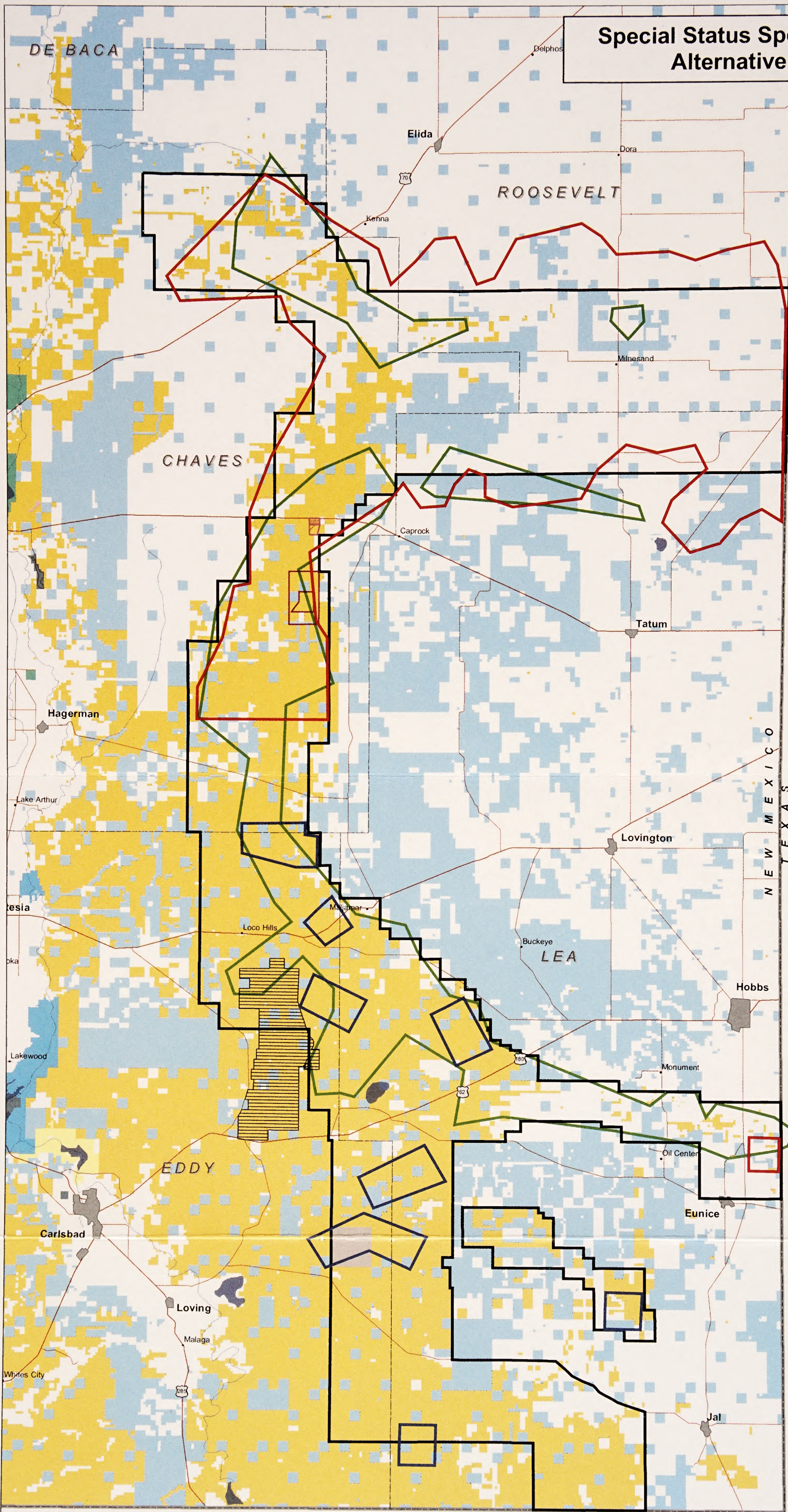
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Produced by the BLM New Mexico State Office Geographic Sciences Team on July 28, 2004.

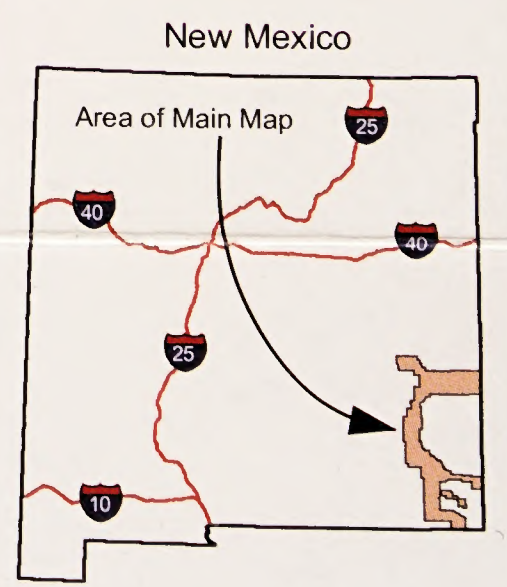
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Produced by the BLM New Mexico State Office Geographic Sciences Team on July 28, 2004.

Special Status Species Amendment Alternative D- Map D-1



- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park
- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village
- RMP Amendment Area
- Mescalero Sands ACEC
- Lizard Habitat Area
- LPC occupied habitat
- LPC Sightings (2001-2005)
- Hackberry Lake OHV Area
- Mescalero Sands North Dune OHV Area
- Mescalero Sands Phase I



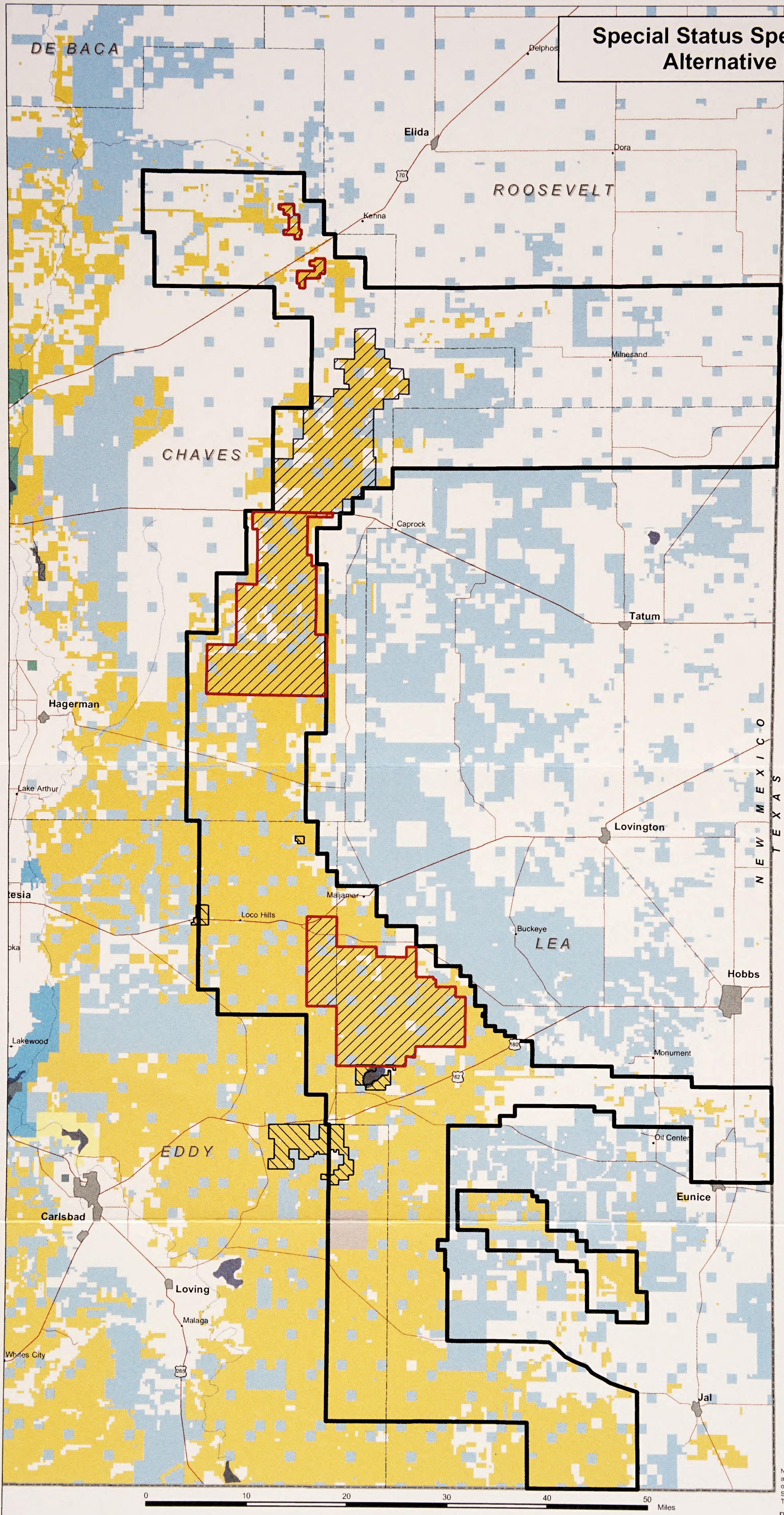
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Produced by the RFO GIS Specialist on Feb. 16, 2006.

WILLIAM D. KELLEY
DIRECTOR OF THE BUREAU OF MINES

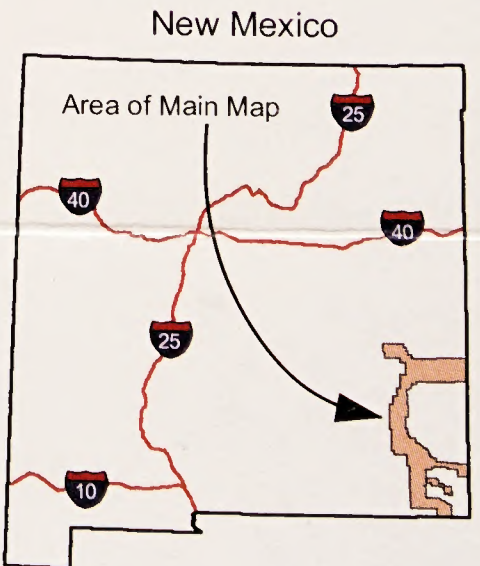
WILLIAM D. KELLEY
DIRECTOR OF THE BUREAU OF MINES



Special Status Species Amendment Alternative E - Map E-1



- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park
- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village
- RMP Amendment Area
- Adaptive Management Area
- Five-year Moratorium
- Proposed ACEC
- CFO's SMA's

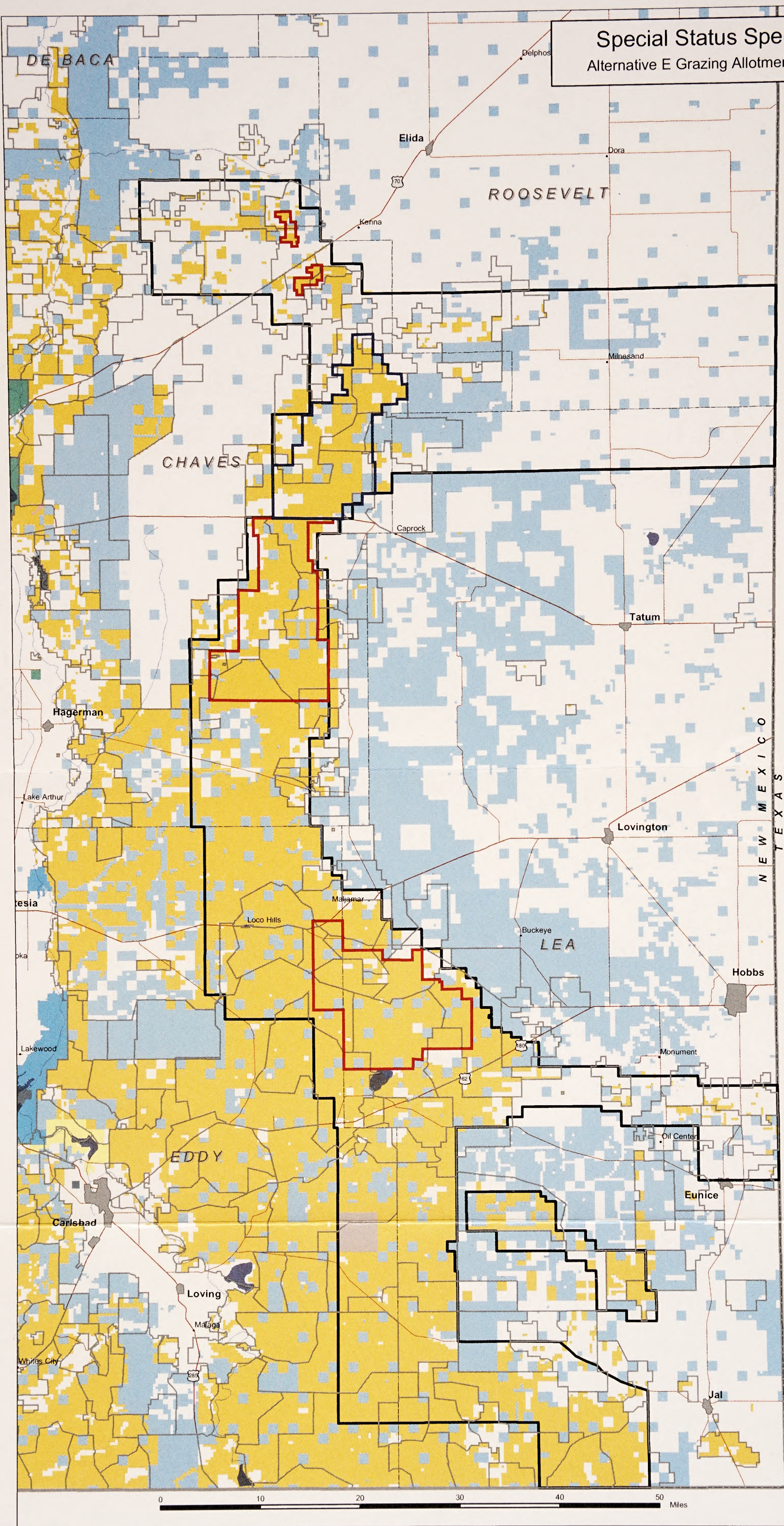


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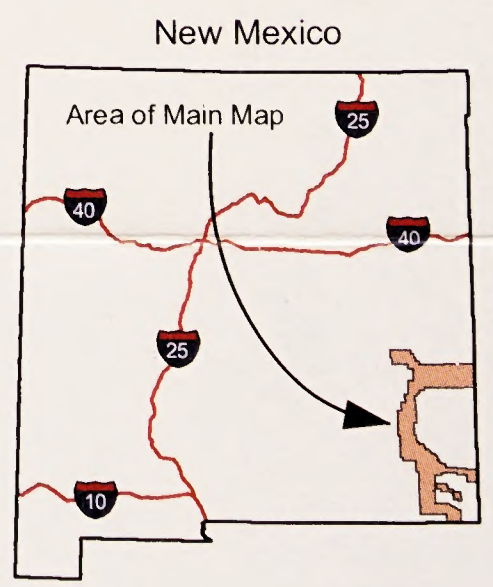
Produced by the RFO GIS Specialist on April 20, 2005.

Special Status Species Amendment

Alternative E Grazing Allotment Boundaries - Map E-2

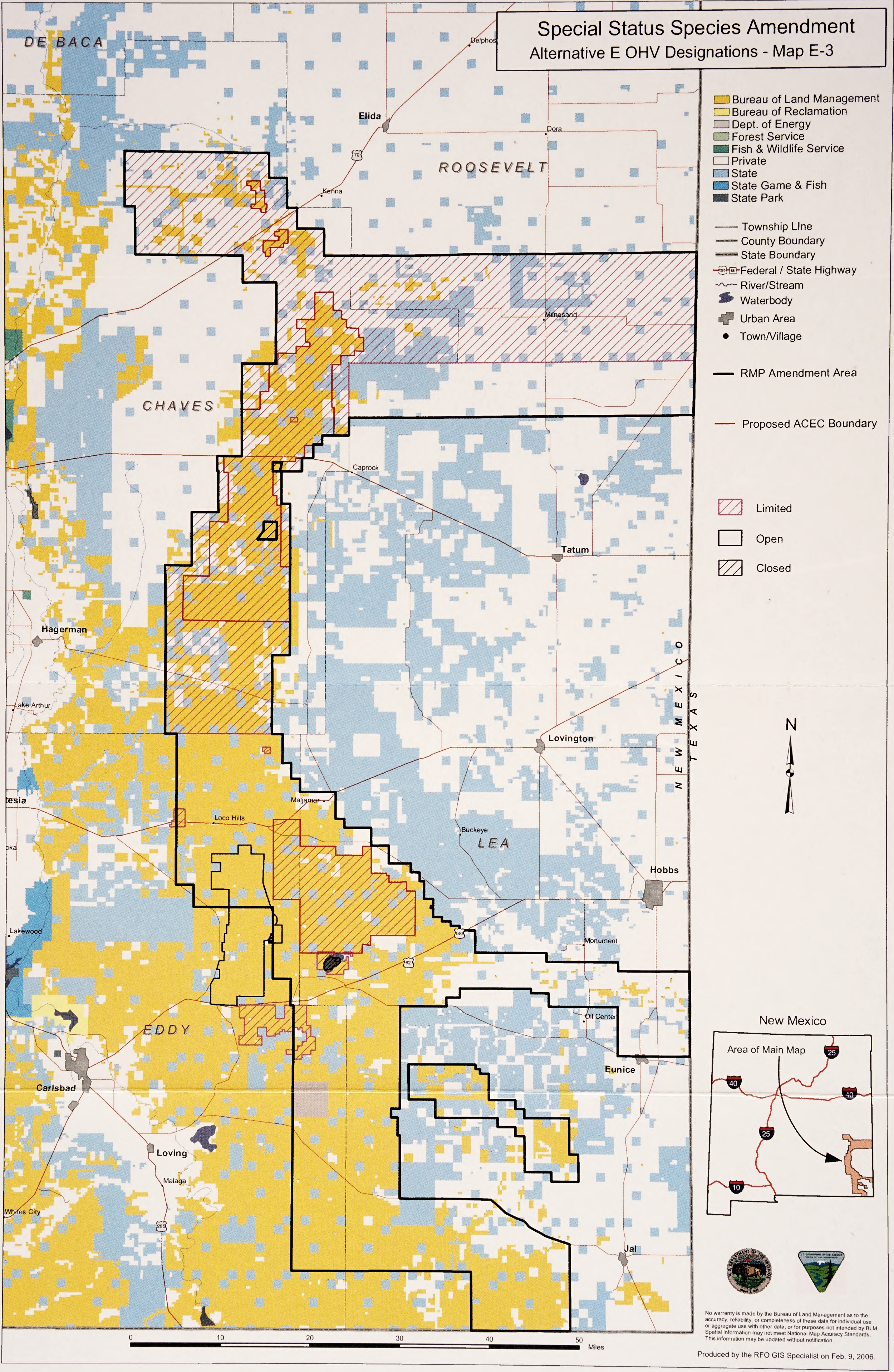


- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park
- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village
- RMP Amendment Area
- Five Year Moratorium
- Allotment Boundaries
- Adaptive Management Area

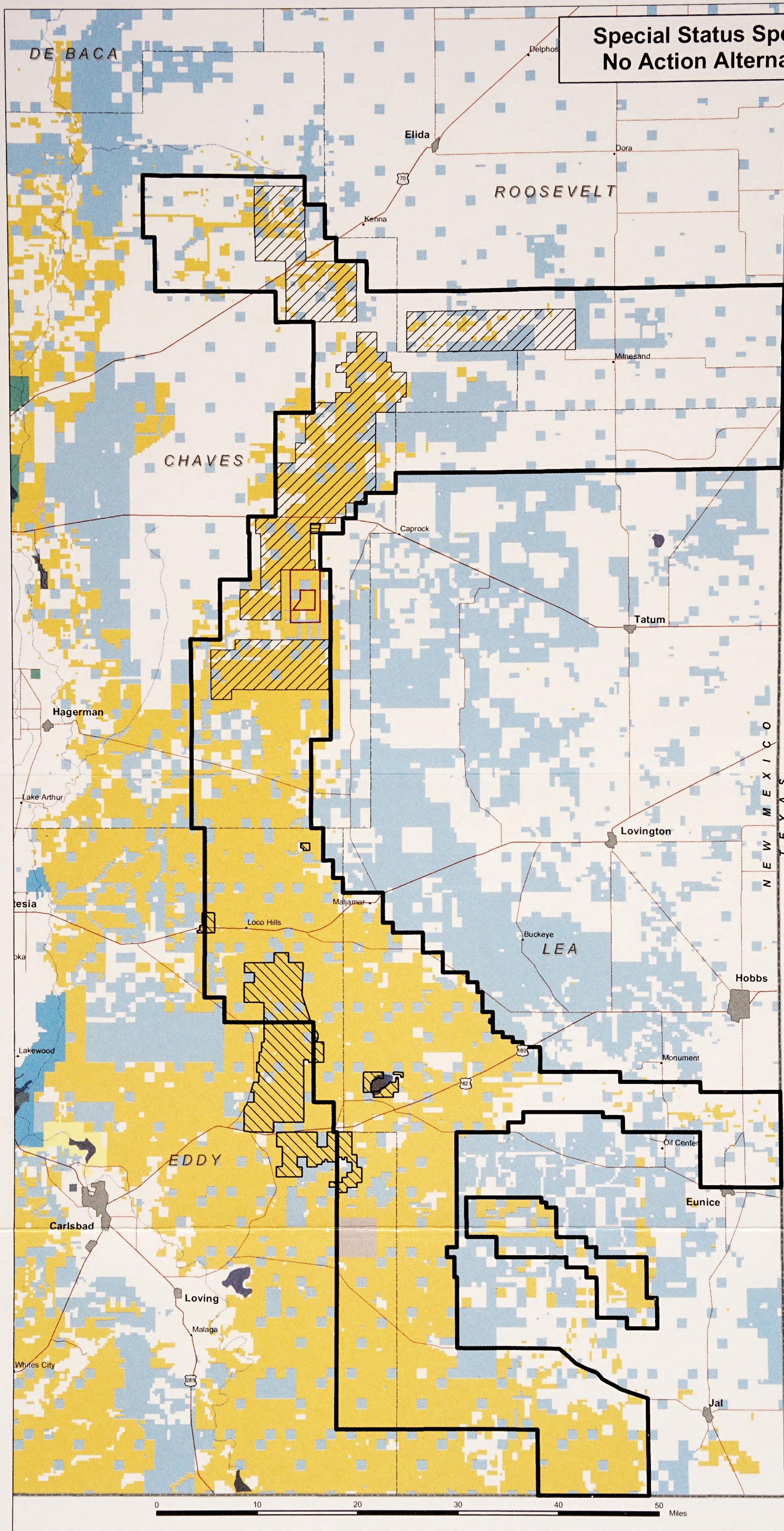


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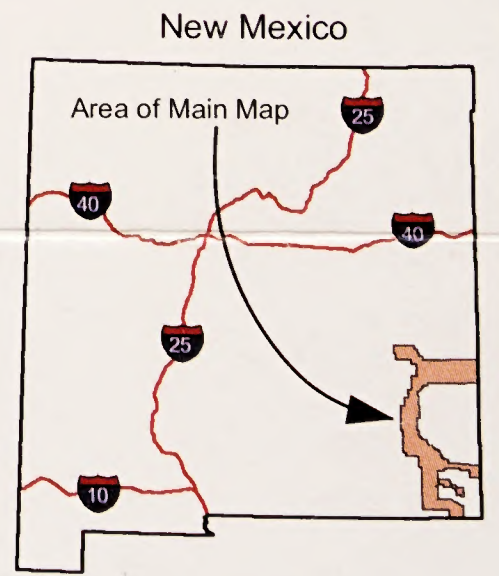
Produced by the RFO GIS Specialist on March 31, 2005.



Special Status Species Amendment No Action Alternative - Map NAA-1



- Bureau of Land Management
- Bureau of Reclamation
- Dept. of Energy
- Forest Service
- Fish & Wildlife Service
- Private
- State
- State Game & Fish
- State Park
- Township Line
- County Boundary
- State Boundary
- Federal / State Highway
- River/Stream
- Waterbody
- Urban Area
- Town/Village
- RMP Amendment Area
- Mescalero Sands ACEC and ONA
- Mescalero Sands OHV Area
- Core Prairie Chicken Habitat
- Mathers RNA
- CFO's SMA's



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Glossary



GLOSSARY

ACQUIRED LANDS. Lands in Federal ownership which were obtained by the government through purchase, condemnation, gift, or exchange.

ACRE-FOOT (AC-FT). Volume of water that will cover one acre of land to a depth of one foot; equals 43,560 cubic feet or 325,851 gallons.

ACTIVE LESSER PRAIRIE CHICKEN LEK SITE. A lek is considered active when, with sufficient annual surveys, two or more males have been seen strutting during the mating season at least one year out of the last five.

ADJUDICATION. A formal court proceeding which results in the determination of the validity and extent of a water right.

AERIAL PHOTOGRAPHY. Photographs taken of the earth's surface from an aircraft. Both color and infra-red aerial photos can be produced which show surface features. Photographs can indicate vegetation changes and water content associated with fractures where caves may be located.

AGGREGATE. Any of several hard, inert materials, such as sand, gravel, slag, or crushed stone, used for mixing with a cementing or bituminous material to form concrete, mortar, or plaster, or used alone, as in railroad ballast or graded fill.

AIR POLLUTION. The general term alluding to the undesirable addition of substances (gases, liquids, or solid particles) to the atmosphere that are foreign to the natural atmosphere or are present in quantities exceeding natural concentrations.

ALKALI LAKES. Shallow plate-like depressions in central portions of basins that drain internally, collect runoff and evaporate rapidly; salt playas.

ALLOTMENT. An area of land designated and managed for grazing of livestock.

ALLOTMENT CATEGORIES. Allotments were placed in one of three categories based on BLM criteria shown below. The criteria for each category were numerous and seldom would an allotment meet all criteria for a category.

I or "Improve" category:

- present range condition is unsatisfactory
- allotments have a moderate or high resource production potential, and are producing at low to moderate levels
- serious resource-use conflicts/controversy exist
- opportunities exist for positive economic return from public investments
- present management appears unsatisfactory

M or "Maintain" category:

- present range condition is satisfactory
- allotments have a moderate or high resource production potential, and are producing near their potential (or trend is moving in that direction)
- no serious resource-use conflicts/controversies exist
- opportunities may exist for positive economic return from public investments
- present management appears satisfactory

C or "Custodial" category:

- present range condition is not a factor
- allotments have a low resource production potential, and are producing at low to moderate levels
- limited resource-use conflicts/controversy may exist
- opportunities for positive economic return on public investments do not exist or are constrained by technological or economic factors
- opportunities exist to achieve the allotments potential through changes in management

ALLOTMENT MANAGEMENT PLAN

(AMP). A livestock grazing activity plan for a specific allotment based on multiple-use resource management objectives. The AMP considers livestock grazing in relation to other uses of the rangelands and in relation to renewable resources (i.e., watershed, vegetation and wildlife). An AMP includes the seasons of use, number of livestock permitted on the allotment, grazing system, and the rangeland developments needed. AMPs are prepared in consultation, cooperation and coordination with the permittee(s), lessee(s) or other involved affected parties.

ANIMAL UNIT MONTH (AUM). The amount of forage necessary for the sustenance of one cow with a nursing calf or its equivalent for a period of one month.

ANNUAL WATER YIELD. The total stream flow volume that passes a specified point in a watershed during a year. It generally equals total precipitation and irrigation, less evapo-transpiration losses and deep seepage losses.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC). Areas within the public land where special management attention is needed to protect and prevent

irreparable damage to important historical, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and provide safety from natural hazards.

AUTHORIZED OFFICER. Any person authorized by the Secretary of the Interior to administer regulations.

AVOIDANCE AREA. An environmentally sensitive area where rights-of-way would be granted only in cases where there is a prevailing need and no practical alternative location exists, and then only with appropriate provisions to protect the sensitive environmental components.

BENEFICIAL USE. The basis, the measure, and the limit of a water right. Agricultural, commercial, industrial, and recreational uses are all considered to be beneficial.

BERM. An embankment or mound of earth or other material. Examples of the use of a berm include use around a tank battery in an oil field to contain spilled fluids or as a barrier across a road or trail to prohibit travel by motor vehicles.

BEST MANAGEMENT PRACTICE (BMP). Methods, measures, or practices selected on the basis of site-specific conditions to ensure environmental quality will be maintained or restored to its highest practicable level. BMPs include, but are not limited to structural and nonstructural controls, operations, and maintenance procedures. BMPs can be applied before, during, or after activities to reduce or eliminate impacts to soil, air, water or vegetation resources.

BIODIVERSITY. Refers to the variety of life and its processes and includes the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur.

CALICHE. A brown or white material commonly found as a subsoil deposit in and or semi-arid climates which is composed largely of calcium carbonate.

CAVE. Any naturally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge (including any cave resource therein, but not including any vug, mine, tunnel, aqueduct, or other manmade excavation) and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or manmade. The term "cave" includes any natural pit, sinkhole, or other feature which is an extension of the entrance. Refer also to "Significant Cave."

CAVE EXPLORATION. The act of entering a naturally occurring void, cavity, recess or system of interconnected passages which occurs beneath the surface of the earth, ledge, or cliff to investigate, study or analyze contents, hazards and extent; to travel into new territories for adventure or discovery.

CLASSIFICATION OF LANDS. The process of determining whether the lands are more valuable or suitable for transfer or use under particular or various public land laws than for retention in federal ownership for management purposes.

COMMUNITY. A group of plants and animals living together in a common area having close interactions.

COMMUNITY PIT. A site from which nonexclusive disposals of mineral materials can be made.

CONDITION OF APPROVAL (COA). A requirement appended to a use authorization that must be met in order to be in conformance with the authorization. Conditions of approval may be standard practices that are routinely applied or may be special requirements developed through

the NEPA process. Conditions of approval usually are applied to mitigate the impacts of an action. Conditions of approval do not modify any rights granted by a lease (e.g., an oil and gas lease). Also, refer to LEASE, PERMIT, and STIPULATION in the

CONSERVATION (ARCHAEOLOGY). A level of management applied to cultural resources exhibiting uniqueness or relative scarcity of similar cultural properties; research potential that surpasses current state of the art; or singular historic importance or architectural interest.

COORDINATED RESOURCE MANAGEMENT PLAN. A plan for management of one or more grazing allotments that involve all the affected resources, e.g., range, wildlife, watershed, minerals, and recreation.

CORRIDOR. A linear strip of land forming a passageway between two points in which transportation and/or utility systems exist or may be located. A designated corridor is the preferred location for existing and future rights-of-way grants that have been identified by law, by secretarial order, through land use planning, or by other management decision.

CRITICAL HABITAT. Any air, land, or water area, including elements thereof, which have been determined (and published in the *Federal Register*) to be essential to the survival of wild populations of an endangered or threatened species or to be necessary for their recovery to a point at which the measures provided pursuant to the ESA are no longer necessary.

CULTURAL RESOURCE. The fragile and nonrenewable remains of human activity, occupation, or endeavor reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works of art, architecture, and natural features that were of importance in human events. These resources consist of physical remains, areas where significant human events occurred even though

evidence of the event no longer remains, and the environment immediately surrounding the actual resource and oral history or ethnographic accounts of life ways and customs.

DESIGNATION. The official identification and naming of a general area or site on public land. Lands may be designated when they are either (1) withdrawn, (2) given special status by act of Congress, or (3) established by an approved land use plan.

DESIGNATED USES. Surface water uses specified by the Water Quality Control Commission for which water quality standards have been established. Designated uses apply whether or not they are being attained.

DESIRED PLANT COMMUNITY (DPC). The plant community which provides the vegetation attributes required for meeting or exceeding RMP vegetation objectives. The DPC must be within an ecological site's capability to produce these attributes through natural succession, management action, or both. A specific description of the vegetation needed to meet the vegetation objectives of a detailed activity plan or implementing action can be described as a desired plant community. Seeding mixtures under DPC would emphasize the use of native species and avoid noxious weeds and exotic species.

DISTRICT. The specific area of public land administered by a District Manager.

DIVERSION. A man-made construction that diverts water from its natural source to be put to beneficial use.

DIVERSITY. The relative degree of abundance of wildlife species, plant species, communities, habitats, or habitat features per unit area.

DRAINAGE. A term used in oil and natural gas extraction meaning the pool of either resource is "drained" or removed either through existing pressure or pumping. These pools may extend beyond the surface ownership boundaries and a well drilled on one surface owner may drain the resource underneath an adjacent surface owner.

DRASTIC. A method developed by the U.S. Environmental Protection Agency for evaluating the potential for groundwater pollution. The name "DRASTIC" is an acronym for the seven hydro geologic factors that the method uses to produce the Drastic Index. The Index is a numerical value which helps prioritize areas with respect to groundwater contamination vulnerability. The factors are: Depth to water; Recharge; Aquifer media; Soil media; Topography (i.e., slope); Impact of the vadose zone; and, Conductivity (hydraulic) of the aquifer.

ECOLOGICAL SITE INVENTORY (ESI). The effort and documentation needed to establish realistic, achievable, and measurable vegetation management objectives.

ECOSYSTEM. A complex self-sustaining natural system which includes living and nonliving components of the environment and the circulation of matter and energy between organisms and their environment.

ENDANGERED SPECIES (FEDERAL). An animal or plant species whose prospects of survival and reproduction are in immediate jeopardy and in danger of extinction throughout all or a significant portion of its range, as defined by the USFWS under the authority of the Endangered Species Act of 1973, as amended. Whether a species is threatened or endangered is determined by the following factors: (1) present or threatened destruction, modification, or

curtailment of its habitat or range; (2) over utilization for commercial, sporting, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; or (5) other natural or human-made factors. Also, see "Threatened Species (Federal)" in the Glossary.

ENDANGERED SPECIES (STATE). Any species or subspecies whose prospects of survival or recruitment in New Mexico are in jeopardy. Also, see "Threatened Species (State)" in the Glossary.

ENVIRONMENTAL ASSESSMENT (EA). The procedure for analyzing the impacts of some proposed action on a given environment and the documentation of that analysis. An EA is similar to an environmental impact statement (EIS) but is generally smaller in scope. An EA may be preliminary to an EIS.

ENVIRONMENTAL IMPACT STATEMENT (EIS). The procedure for analyzing the impacts (both beneficial and adverse) of a proposed action on a given environment, and the documentation of that analysis.

ENVIRONMENTAL JUSTICE). The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

ENVIRONMENTAL QUALITY INCENTIVES PROGRAM (EQIP). A voluntary conservation program for farmers and ranchers that promotes agricultural production and environmental quality as

compatible national goals. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land.

EPHEMERAL STREAM. A stream that flows in direct response to surface runoff.

EPHEMERAL. A stream or portion of a stream that flows in direct response to precipitation, lasts for a short period of time, and is not influenced by ground water sources. Also pertains to playa lakes which can be intermittently wet.

EXCEPTION. Case-by-case exemption from a lease stipulation. The stipulation continues to apply to all other sites within the leasehold to which the restrictive criteria apply.

EXCHANGE. A trading of public land (surface or subsurface estates) that usually does not have high public value, for lands in other ownerships which do have value for public use, management and enjoyment. The exchange may be for the benefit of other Federal agencies as well as BLM.

EXCLUSION AREAS. Areas where future rights-of-way may be granted only when mandated by law.

EXTENSIVE RECREATION MANAGEMENT AREAS (ERMA). Areas where recreation is unstructured and dispersed and where minimal recreation-related investments are required. ERMA's provide recreation visitors the freedom of choice with minimal regulatory constraint. These areas consist of the remainder of land areas not included in Special Recreation Management Areas within a District or Field Office area.

FEDERAL CAVE RESOURCES PROTECTION ACT (FCRPA) OF 1988. The purposes of this act are (1) to secure, protect, and preserve significant caves on Federal lands for the perpetual use,

enjoyment, and benefit of all people; and (2) to foster increased cooperation and exchange of information between governmental authorities and those who utilize caves located on Federal lands for scientific, education, or recreational purposes.

FEDERAL LAND. Land owned by the United States and administered by the Federal government. Federal land includes public land (see Public Land in the Glossary).

FEDERAL LAND POLICY AND MANAGEMENT ACT (FLPMA) OF 1976.

Public Law 94-579, gives the BLM legal authority to establish public land policy; to establish guidelines for administering such policy; and to provide for the management, protection, development, and enhancement of the public land. Often referred to and pronounced "flipma."

FEDERAL RESERVED WATER RIGHT. A water right which is reserved by the Federal government when land is withdrawn from the public domain for a particular purpose, such as National parks, forests, and monuments. The amount of water reserved is only that necessary to fulfill the intended purpose.

FIELD OFFICE. The smallest administrative subdivision of a BLM district. A Field Office is administered by a Field Manager and is the equivalent of a resource area.

FIRE MANAGEMENT UNIT (FMU). A land management area definable by objectives, management constraints, topographic features, access, values to be protected, political boundaries, fuel types, major fire regime groups, etc. that set it apart from the characteristics of an adjacent FMU. The FMU may have dominant management objectives and pre-selected strategies assigned to accomplish these objectives.

FIRE REGIME CURRENT CONDITION

CLASS. A qualitative measure classified into three classes describing the relative degree of departure from historical fire regimes, possibly resulting in alterations of key ecosystem components such as species composition, structural stage, stand age, canopy closure, and fuel loadings.

FLOODPLAIN. See "One Hundred-Year Floodplain" in the Glossary.

FLOWLINE. The surface pipe through which oil, water, or gas travels from a well to processing equipment or to storage.

FRAGILE SOIL. A soil that is easily damaged by use or disturbance. Examples include soils that are susceptible to compaction or other mechanic damage to their structure, or soils that are highly erodible when disturbed.

GEOGRAPHIC INFORMATION SYSTEM

(GIS). Through the use of computer technology, GIS allows the input, storage, analysis, and display of a great volume and variety of physically locatable data (i.e., data which is known to exist at some specific place or area on the ground).

GRANT. A gift of public land either in quantity or in place. Also, the document or the action which conveys land or an interest in land.

GRAZING CAPACITY. The maximum livestock stocking rate possible without inducing damage to vegetation or related resources such as watershed. This incorporates factors such as suitability of the rangeland for grazing as well as the proper use which can be made on all of the plants within the area. Normally expressed in terms of acres per animal unit month (AC/AUM) or sometimes referred to as the total AU Ms that are available in any given area, such as an allotment. Areas that are unsuitable for livestock use are not

computed in the grazing capacity. Grazing capacity may or may not be the same as the stocking rate.

GRAZING DISTRICT. Means the specific area within which the public land are administered under Section 3 of the Taylor Grazing Act. Public land outside grazing district boundaries is administered under Section 15 of the Taylor Grazing Act.

GROUND WATER. Subsurface water contained in interconnected pores between soil or rock particles in a zone of saturation. Groundwater includes underground lakes and streams in karst areas.

HABITAT. The place where an animal or plant normally lives during its life cycle often characterized by dominant food, cover, water, and space (e.g., the stream habitat, the forest habitat).

HABITAT MANAGEMENT PLAN (HMP). A written and officially approved plan for a specific geographical area of public land which identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

HAZARDOUS MATERIAL. Any substance posing a threat to the health or safety of persons or the environment. These includes but is not limited to RCRA hazardous wastes, CERCLA and CWA hazardous substances, DOT hazardous materials, OSHA hazardous chemicals, SRA Title III toxics and extremely hazardous substances, and biological and disease-causing agents.

INFORMATION (ARCHAEOLOGY). A level of management applied to cultural resources. Most sites fall into this category and would be studied for the information that could be retrieved from them. The process of extracting information often destroys the site. These sites could be lithic scatters, campsites and other types of sites.

INTERMITTENT STREAM. A stream that does not flow year round but has some association with ground water for surface or subsurface flows.

KARST. A landform where the topography has been formed chiefly by the dissolving of rock. In some cases, the dissolving of rock may be extensive enough to form passages through which an individual could pass. Surface expressions include sinking streams, swalletts, springs and resurgences, and the presence of sinkholes and caves. Surface streams are few, with most of the drainage being underground. These features are important for ground-water recharge of karst systems.

LEASABLE MINERALS. See Mineral Materials.

LEASE. An authorization to possess and use public land for a fixed period of time (usually long-term). Also, any contract, profit-share arrangement, joint venture, or other agreement issued or approved by the United States Government under a mineral leasing law that authorizes exploration for, extraction of, or removal of oil and gas resources.

LEASE NOTICE. An attachment to an oil and gas lease that transmits information at the time of lease issuance to assist a lessee in submitting acceptable plans of operation, or to assist in administration of leases. A Lease Notice is used to disclose a situation or condition known to exist that could affect lease operations. Lease Notices are not a basis for denial of lease operations.

LEGAL ACCESS. In the context of access to public land, especially public land tracts that may be adjacent to or surrounded by land of other ownerships, legal access exists when a person can reach a given public land tract without trespassing, such as from a public road or highway, or from another tract of public land. (See "Physical Access.")

LENTIC. Pertaining to static, calm, or slow moving water or aquatic habitats, such as a marsh.

LEK. A specific area (also termed display, gobbling, booming or strutting grounds) where two or more prairie chicken cocks congregate, typically year after year, for courtship displays in early spring, and vary in size from one-eighth acre to several acres.

LOCATABLE MINERALS. Minerals subject to disposal and development through the Mining Law of 1872 (as amended). Includes all "valuable mineral deposits" including metallic and nonmetallic minerals such as gold, lead, barite, fluorspar or high calcium limestone. It also includes uncommon varieties of sand, stone, gravel, cinders, pumice, pumicite and clay. Also included are all valuable minerals that are not excluded under the leasable and salable minerals.

MANAGEMENT FRAMEWORK PLAN (MFP). A planning decision document now replaced by RMPs that establishes for a given planning area land use allocations, coordination guidelines for multiple use, and management objectives to be achieved for each class of land use or protection.

MINERAL MATERIALS. Minerals such as common varieties of sand, stone, gravel, pumice, pumicite and clay which are not obtainable under the mining or leasing laws but which can be obtained under the Materials Act of 1947, as amended. Also known as saleable minerals.

MODERN URBAN. Areas with recreation opportunities to experience affiliation with individuals and groups are prevalent as in the convenience of sites and opportunities. Experiencing the natural environment and the use of outdoor skills are largely unimportant. One of the six classes of the Recreation Opportunity Spectrum (ROS).

MODIFICATION. A fundamental change in the provisions of a lease stipulation, either temporarily or for the term of the lease. A modification may, therefore, include an exemption from or an alteration to a stipulated requirement. Depending on the specific modification, the stipulation may or may not apply to all other sites within the leasehold to which the restrictive stipulation applies.

MULTIPLE USE MANAGEMENT. Management of public land and their various resource values so they are used in the combination best meeting the present and future needs of the American people. Such a concept allows for the most judicious use of some or all of the resources over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions. Relative resource values are considered, not necessarily the combination of uses that would give the greatest potential economic return or the greatest unit output.

NATIONAL REGISTER OF HISTORIC PLACES. A list of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, and culture.

NATIONAL TRAILS SYSTEM. The National Trails System is composed of four types of trails: (1) national recreation trails; (2) national scenic trails; (3) national historic trails; and (4) connecting or side trails. National recreation trails provide for numerous outdoor recreation activities in a variety of urban, rural, and remote areas. They may be designated by the Secretary of the Interior or by the Secretary of Agriculture where lands administered by that agency are involved.

NONPOINT SOURCE POLLUTION (NPS). The alteration of waters by activities not regulated as point sources, which degrade the quality or adversely affect the biological community inhabiting the waters.

NO SURFACE OCCUPANCY (NSO). A condition of surface use attached to a lease or other authorization applied to minerals exploration and development which prohibits occupancy of only the land surface or to protect other identified resource values.

NOXIOUS WEED. A plant that causes disease or has other adverse effects on the human environment and is, therefore, detrimental to the agriculture and commerce of the United States and public health. Generally, noxious weeds possess one or more of the characteristics of being aggressive and difficult to manage, parasitic, a carrier or host of harmful insects or disease, and being either native, new to, or not common in, the United States. In most cases, however noxious weeds are normative species. Noxious weeds are designated and regulated by various state and Federal laws.

OCCUPIED LESSER PRAIRIE CHICKEN HABITAT. All areas within 1.5 miles of an active lesser prairie chicken site, regardless of vegetation. Upon discovery of a previously unknown active sites, the surrounding 1.5-mile radius circle is considered occupied habitat.

OFF-HIGHWAY VEHICLE (OHV). Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other terrain.

Open: Vehicle travel is permitted in the area (both on and off roads) if the vehicle is operated responsibly in a manner not causing, or unlikely to cause significant, undue damage to or disturbance of the soil, wildlife, wildlife habitat, improvements, cultural, or vegetative resources of other authorized uses of the public land.

Limited: Designated areas and trails where the use of an OHV is subject to restrictions, such as limiting the number on types of vehicles allowed, or dates and times of use

(seasonal restrictions); limiting use to designated roads and trails. Combinations of restrictions are possible, such as limiting use to certain types of vehicles during certain times of the year.

Closed: Designated areas, roads, and trails where the use of an OHV is permanently or temporarily prohibited. Emergency use of vehicles is allowed.

ONE HUNDRED-YEAR FLOOD. The flood that will be equaled or exceeded an average of once every 100 years; i.e. the flood that has a one percent chance of being equaled or exceeded in any given year.

ONE HUNDRED-YEAR FLOODPLAIN. The area adjacent to a stream or body of water that would be inundated at the peak of the one hundred-year flood. The floodplain delineated on Flood Insurance Rate Maps (FIRMS) or Flood Hazard Boundary Maps (FHBMS) published by the Federal Emergency Management Agency will be used for management purposes. When a FIRM or FHBM map is not available for the area of interest, the best available information will be used.

PAYMENT IN LIEU OF TAXES (PILT). Payments to local or state governments based on ownership of Federal land and not directly dependent on production of outputs or receipt sharing.

PERENNIAL STREAM. Surface water normally flows throughout the year except during infrequent years of drought.

PERMIT (GRAZING). A document authorizing use of the public land within grazing districts under Section 3 of the Taylor Grazing Act for the purpose of grazing livestock.

PERMIT (LAND). A short-term (generally under 3 years), revocable authorization to use public land for specific purposes.

PETROGLYPH. A form of rock art manufactured by incising, scratching, or pecking designs into rock surfaces.

PHREATOPHYTE. A type of plant common to arid regions which has an extensive root system to draw water directly from the water table.

PHYSICAL ACCESS. In the context of access to public land, especially public land tracts that may be adjacent to or surrounded by land of other ownerships, physical access exists when a person can physically reach a given public land tract. The existence of physical access does not always mean that legal access exists. In some cases, taking advantage of physical access may involve trespass. (See "Legal Access.")

PIPELINE. A system of connected lengths of steel or plastic pipe, laid either in the earth or on the surface that is used for transporting petroleum, petroleum products, chemicals, natural gas, or other fluids.

PLAN OF DEVELOPMENT. The purpose of a Plan of Development (POD) is to manage development so that impacts to special status species habitat are minimized or eliminated. A POD would incorporate applicable best management practices and disclose all future well locations; the location and arrangement of well infrastructure (e. g., tank batteries, compressors, power lines and poles); road locations; and rights-of-way. Plans of Development (POD) contain proprietary information and therefore are not subject to disclosure under the Freedom of Information Act.

PLAYA. A shallow, nearly level, often saline, dry lake bed. Playas vary considerably in materials, salinity, and hydrologic regime. In general, playas: (1) collect surface runoff in closed basins; (2) are poorly vegetated; (3) are ephemerally flooded; and (4) have a thin surface of non-gravelly, fine-textured sediment.

POINT SOURCE POLLUTION. Pollution discharged from any discernible, confined, and discrete conveyance into a water body; e.g., effluent from a pipe. Point source pollution does not include return flow from irrigated agricultural land.

POTENTIALLY SUITABLE LESSER PRAIRIE CHICKEN HABITAT.

Unoccupied areas of appropriate vegetation type, but in patches of less than 320 acres and/or falling within Robel impact/avoidance distances around infrastructure.

PRECIPITATION. Any or all forms of water particles, liquid or solid, which fall from the atmosphere and reach the ground.

PRESCRIBED FIRE. Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements (where applicable) must be met, prior to ignition.

PRESCRIPTION. A written statement defining objectives to be attained as well as temperature, humidity, wind direction and wind speed, fuel moisture content, and soil moisture under which a fire will be allowed to burn, generally expressed as acceptable ranges of the various indices, and the limit of the geographic area to be covered.

PRIMITIVE (P). Areas with recreation opportunities for isolation from the sights and sounds of man, to feel a part of the natural environment, to have a high degree of challenge and risk, and to use outdoor skills. One of the six classes of the Recreation Opportunity Spectrum (ROS).

PUBLIC LAND. Any land and interest in land owned by the United States within the several states and administered by the Secretary of the Interior through the Bureau of the Land Management, without regard to how the United States acquired ownership, except (1) land located on the Outer Continental Shelf; and (2) land held for the benefit of Indians, Aleuts, and Eskimos.

PUBLIC VALUES AND INTERPRETATION (ARCHAEOLOGY).

A level of management of cultural sites which contribute to the belief systems and folkways of a cultural group such as locations having religious significance. Public interpretive sites would have qualities that would lend themselves to being utilized as recreation, education, and interpretive areas.

QUARRYING (MINING). The extraction of building stone or other valuable nonmetallic constituent from a surface mine, or quarry.

RANGELAND. Land used for grazing by livestock and big game animals on which the vegetation is dominated by grasses, grass-like plants, forbs, or shrubs.

RANGE IMPROVEMENT. An authorized activity or program on or relating to rangelands which is designed to improve production of forage; range vegetative composition; control patterns of use; provide water; stabilize soil and water conditions; and provide habitat for livestock, wild horses or burros, and wildlife. The term includes, but is not limited to structures, treatment projects, and use of mechanical means to accomplish the desired results.

RAPTOR. A bird of prey, such as an eagle, hawk, or owl.

RECLAMATION. The reconstruction of disturbance by returning the land to a condition approximate or equal to that which existed prior to disturbance, or to a stable and productive condition compatible with the land use plan. The immediate goal of reclamation is to stabilize disturbed areas and protect both disturbed and adjacent undisturbed areas from unnecessary degradation.

RECREATION AND PUBLIC PURPOSES

ACT (R&PP). The Act of June 14, 1926, as amended (43 U.S.C. 869, 869-4). Allows the disposal of public land to any state, local, Federal, or political instrumentality or nonprofit organization or any recreational or

public purpose, at the discretion of the authorized officer.

RECREATION OPPORTUNITY

SPECTRUM (ROS). A continuum used to characterize recreation opportunities in terms of setting, activity, and experience opportunities. Six classes are included: primitive (P), semi-primitive nonmotorized (SPNM), semi-primitive motorized (SPM), roaded natural (RN), rural (R), and modern urban (U). Refer to the individual definitions in this glossary.

RESERVATION. A withdrawal of a permanent nature, dedicated to a specific public purpose.

RESOURCE MANAGEMENT PLAN

(RMP). A written land use plan that outlines BLM's decisions and strategies for management of the resources in a particular area. The RMP has been used by the BLM since 1980.

RESTRICTED AREAS. Areas where mitigation such as seasonal restrictions is required to protect resource values.

RIGHT-OF-WAY (ROW). The legal right for use, occupancy, or access across land or water areas for a specified purpose or purposes. Also, the lands covered by such a right. Examples are roads, power lines, pipelines, water wells, and communication sites. It does not grant an estate of any kind.

RIPARIAN AREAS. Riparian areas are a form of wetland transition between permanently saturated wetlands and upland areas. These areas exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water influence. Lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers, and streams, glacial potholes, and the shores of lakes and reservoirs with stable water levels are typical riparian areas. Excluded are such sites as ephemeral streams or washes that

do not exhibit the presence of vegetation dependent upon free water in the soil.

ROADED NATURAL (RN). Areas with about equal recreation opportunities for affiliation with other user groups and for isolation from sights and sounds of humans. Involves the opportunity to have a high degree of interaction with the natural environmental. Challenge and risk opportunities are not very important except in specific challenging activities. The practice of outdoor skills may be important. Opportunities for both motorized and nonmotorized recreation are present. One of the six classes of the Recreation Opportunity Spectrum (ROS).

RURAL (R). Areas with recreation opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. These factors are generally more important than the natural setting. Opportunities for wild land challenges, risk taking, and testing of outdoor skills are unimportant, except in activities involving challenge and risk. One of the six classes of the Recreation Opportunity Spectrum (ROS).

SCOPING PROCESS. An early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. Scoping may involve public meetings, field interviews with representatives of agencies and interest groups, discussions with resource specialists and managers, written comments in response to news release, direct mailings and articles about the proposed action, and scoping meetings.

SEDIMENT YIELD. A quantitative measure of the total sediment outflow from a watershed over a given period of time at a specified point in the channel. Sediment yield is the difference between the total erosion from slopes, channels, and mass wasting, and the amount of sediment

deposited before reaching the specified point in the channel.

SEEPS. Is where ground water percolates to the surface and forms a saturated area.

SEMI-PRIMITIVE MOTORIZED (SPM). Areas with some recreation opportunity for isolation from the sights and sounds of humans, but not as important as for primitive opportunities. Involves the opportunity to have a high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills. Provides an explicit opportunity to use motorized equipment while in the area. One of the six classes of the Recreation Opportunity Spectrum (ROS).

SEMI-PRIMITIVE NONMOTORIZED (SPNM). Areas with some recreation opportunity for isolation from the sights and sounds of humans, but not as important as for primitive opportunities. Involves the opportunity to have a high degree of interaction with the natural environmental, to have moderate challenge and risk, and to use outdoor skills. One of the six classes of the Recreation Opportunity Spectrum (ROS).

SIGNIFICANT CAVE. A cave located on federal lands that possesses one or more of the following features, characteristics, or values (1) Biota; (2) Cultural; (3) Geologic/Mineralogic/Paleontologic; (4) Hydrologic; (5) Recreational; (6) Educational or Scientific.

SIGNIFICANT KARST. An area in which sinkholes or other features, such as lineaments, provide points of recharge to an aquifer that is the source of water for human, livestock, or wildlife use, or which provides a primary recharge zone for cave-related hydrologic systems.

SINKHOLE. A closed depression formed when the ground surface collapses above voids created by the solution of carbonate or evaporite rocks. Water levels typically

fluctuate rapidly in sinkholes because of their close connection to groundwater.

SLOPE. The inclination of the land surface to the horizontal. When expressed as a percent, slope equals the change in elevation divided by the horizontal distance, with the result multiplied by 100 percent. Thus, a slope of 20 percent is a change in elevation of 20 feet for every 100 feet horizontally.

SOLID LEASABLE MINERALS. The chlorides, sulfates, carbonates, borates, silicates or nitrates of potassium or sodium and related products; sulphur in the States of Louisiana and New Mexico and on all acquired lands; phosphate, including associated and related minerals; asphalt in certain lands in Oklahoma; and gilsonite (including all vein-type solid hydrocarbons).

SPECIAL HABITAT FEATURE. A specific component of a habitat site requiring individual consideration, including geological anomalies (cliffs), aquatic situations (seeps), or manmade structures (windmill). A feature may be present in the habitat site because of animal use (booming grounds). Special habitat features may affect wildlife positively or negatively.

SPECIAL MANAGEMENT AREAS. An area containing one or a combination of unique resources or values that receive more intensive management (e.g., ACECS, WSAS, and SRMAS.)

SPECIAL RECREATION MANAGEMENT AREA (SRMA). Areas requiring explicit recreation management to achieve BLM's recreation objectives and to provide specific recreation opportunities. SRMAs are listed in this plan, which also define SRMA management objectives. BLM's recreation investments are concentrated in these areas.

SPECIAL STATUS SPECIES. Wildlife and plant species either Federally-listed or proposed for listing (candidates) as

endangered or threatened, State-listed species, or BLM-determined priority species (sensitive species).

SPRING. Where water is discharged from a fixed point and the flow usually forms a small channel.

STATE APPROPRIATIVE WATER RIGHT. A water right licensed by the New Mexico State Engineer once proof of beneficial use is established.

STATE HISTORIC PRESERVATION OFFICER (SHPO). A position within State governments responsible for coordinating State participation in the implementation of the National Historic Preservation Act. This officer serves as an assistant and consultant when identifying cultural properties, assessing effects to them, and considering alternatives to avoid or reduce those effects.

STIPULATION. A requirement, usually dealing with protection of the environment that is made a part of a lease, grant, or other authorizing document. In the case of oil and gas leases, a provision that modifies standard lease rights and is attached to and made a part of the lease. Also, refer to "CONDITION OF APPROVAL" in the Glossary. The following represent the major stipulations on BLM land:

No Surface Occupancy Stipulation (NSO): A stipulation in which use or occupancy of the land surface for fluid mineral exploration or development is prohibited to protect identified resource values.

Timing Limitation Stipulation: A stipulation which prohibits surface use during specified time periods to protect identified resource values. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that

less stringent, project specific mitigation measures would be insufficient.

Controlled Surface Use Stipulation

(CSU): A stipulation in which use and occupancy is allowed (unless restricted by another stipulation), but identified resources values require special operational constraints that may modify the lease rights.

STRUTTING GROUND. Synonymous with Lek.

SUITABILITY. The adaptability of an area to grazing by livestock or wildlife.

SUITABLE LESSER PRAIRIE CHICKEN

HABITAT. Unoccupied areas of appropriate vegetation type, in patches of 320 acres or more falling entirely outside of Robel impact/avoidance distances around infrastructure.

SUITABLE RANGE. Rangeland that is accessible to livestock, which can be grazed on a sustained yield basis without damaging the resource.

SURFACE DISTURBANCE. Any action that removal of soil or vegetation and expose the mineral soil to erosive processes. Used in the literal context of actual, physical disturbance and movement or removal of the land surface and vegetation.

SURFACE WATER. All water located at the surface of the land, such as streams, rivers, and lakes.

THREATENED SPECIES (Federal). Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Whether a species is threatened or endangered is determined by the following factors: (1) present or threatened destruction, modification, or curtailment of its habitat or range; (2) over utilization for commercial, sporting, scientific, or educational purposes; (3)

disease or predation; (4) inadequacy of existing regulatory mechanisms; or (5) other natural or human-made factors. Also, see "Endangered Species (Federal)" in the Glossary.

THREATENED SPECIES (State). Any species or subspecies that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range in New Mexico. Also, see "Endangered Species (State)" in the Glossary.

TURBIDITY. A condition in water caused by the presence of suspended matter which results in the scattering and absorption of light. Generally, a measure of fine suspended matter in water.

UNITIZATION. The joint development of an oil field that includes territory controlled by different owners. A unitized field allows participants to share both royalties and risks in the development of the field and to utilize the field's natural features without damaging the field through excessive competition.

UNSUITABLE LESSER PRAIRIE

CHICKEN HABITAT. Areas outside appropriate vegetation. This may include urban and agricultural areas, areas where shinnery oak is naturally not present or has been eliminated by chemical treatment, and other areas where natural vegetation has been greatly altered or degraded.

USE OF WILDLAND FIRE. Either wildland fire use or prescribed fire applications to meet resource objectives.

VALUE. As used in the RMP/EIS, a value refers to a natural resource or characteristic of a natural resource that is not usually a commodity or is difficult to quantify in terms of a unit of measurement. Examples of values in this context are listed in FLPMA and include scientific, scenic, air and atmospheric, historical, archeological and ecological resources.

VEGETATION TREATMENTS. Methods used to manage the growth and spread of vegetation. A vegetative management practice can either be a direct management of the vegetation itself, for example prescribed fire or indirect management like a change in the number of livestock utilizing the vegetation, or a change in the time frames when livestock are utilizing the vegetation.

VISUAL RESOURCES MANAGEMENT (VRM). The inventory and planning actions taken to identify visual values and to establish objectives for managing those values; and the management actions taken to achieve the visual management objectives.

VISUAL RESOURCE MANAGEMENT (VRM) CLASSES. VRM classes are based on relative visual ratings of inventoried lands. Each class describes the different degree of modification allowed to the basic elements of the landscape. The following are the minimum management objective for each class.

Class 1: Natural ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention. This classification is applied to Visual Areas of Critical Environmental Concern, wilderness areas, wild and scenic rivers, and other similar situations.

Class II: Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the landscape. A contrast may be seen but should not attract attention.

Class III: Contrasts to the basic elements caused by a management activity may be evident and begin to attract attention in the landscape. The changes, however, should remain subordinate in the existing landscape.

Class IV: Contrasts may attract attention and be a dominant feature in the landscape in terms of scale. However, the changes should repeat the basic elements of the landscape.

Rehabilitation Area: Change is needed or change may add acceptable visual variety to an area. This class applies to areas where the naturalistic character has been disturbed to a point where rehabilitation is needed to bring it back into character with the surrounding landscape. This class would apply to areas identified in the scenic evaluation where the quality class has been reduced because of unacceptable cultural modification. The contrast is inharmonious with the characteristic landscape. It may also be applied to areas that have the potential for enhancement; i.e., add acceptable visual variety to an area or site. It should be considered an interim or short term classification until one of the other VRM class objectives can be reached through rehabilitation or enhancement. The desired visual resource management class should be identified.

WAIVER. Permanent exemption from a lease stipulation. The stipulation no longer applies anywhere within the leasehold.

WATER QUALITY STANDARD.

Regulations which specify designated uses for surface waters of the state, and water quality criteria to protect those uses. Standards are specified by the Water Quality Control Commission, in accordance with Section 303 of the Clean Water Act.

WETLANDS. Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and which, under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include marshes, shallows, swamps, lake shores, bogs, muskegs, wet meadows, estuaries, and riparian areas.

WILDERNESS. The definition contained in Section 2(c) of the Wilderness Act of 1964 is as follows: "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain." Wilderness is an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

WILDERNESS AREA (WA). An area formally designated by Congress as part of the National Wilderness Preservation System.

WILDERNESS STUDY AREA (WSA). A roadless area which has been found to have wilderness characteristics.

WILDERNESS CHARACTERISTICS. Those characteristics of wilderness as described in Section 2(c) of the Wilderness Act. These include size, naturalness, solitude, primitive and unconfined type of recreation, and supplemental values.

WILDFIRE. An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.

WILDFIRE SUPPRESSION. An appropriate management response to wildfire, escaped wildland fire use or prescribed fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire.

WILDLAND FIRE. Any non-structure fire that occurs in the wildland. Three distinct types of wildland fire have been defined and include wildfire, wildland fire use, and prescribed fire.

WILDLAND FIRE USE. The application of the appropriate management response to naturally-ignited wildland fires to accomplish specific resource management objectives in pre-defined designated areas outlined in Fire Management Plans.

WILDLIFE. Includes all species of animals, birds, mammals, mollusks, crustaceans, amphibians, fish, insects, reptiles, or their progeny or eggs which, whether raised in captivity or not, are normally found in a wild state. Feral horses and burrows are excluded.

WITHDRAWAL. Removal or withholding of public land, by statute or secretarial order, from operation of some or all of the public land laws. A mineral withdrawal is the closing of an area to mineral location and development activities. A mineral withdrawal includes public lands potentially valuable for solid leasable minerals, precluding the disposal of the lands except with a mineral reservation clause unless the lands are found not to contain a valuable deposit of minerals.

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The first part of the paper discusses the importance of the study and the objectives of the research.

The second part of the paper describes the methodology used in the study, including the data collection and analysis techniques.

The third part of the paper presents the results of the study, which show a significant positive correlation between the variables.

The fourth part of the paper discusses the implications of the findings and provides recommendations for future research.

The fifth part of the paper concludes the study and summarizes the main findings.

The sixth part of the paper provides a list of references and acknowledges the contributions of the research team.

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LIST OF ACRONYMS

ACEC	Area of Critical Environmental Concern	NAAQS	National Ambient Air Quality Standards
ADC	Animal Damage Control	NEPA	National Environmental Policy Act
AMS	Analysis of the Management Situation	NHPA	National Historic Preservation Act
APD	Application for Permit to Drill	NMCRIS	New Mexico Cultural Resources Information System
APHIS	Animal & Plant Health Inspection Service	NMED	New Mexico Environment Department
ARPA	Archaeological Resources Protection Act	NMDA	New Mexico Department of Agriculture
AUM	Animal Unit Month	NMDGF	New Mexico Department of Game and Fish
BE	Biological Evaluation	NMWQCC	New Mexico Water Quality Control Commission
BLM	Bureau of Land Management	NOI	Notice of Intent
BMPs	Best Management Practices	NPS	National Park Service
CAA	Clean Air Act	NRCS	Natural Resources Conservation Service
CEQ	Council on Environmental Quality	NRHP	National Register of Historic Places
CFR	Code of Federal Regulations	NSO	No Surface Occupancy
CMA	Core Management Area	NTL	Notice to Lessees
CNOR	Candidate Notice of Review	OHV	Off-Highway Vehicle
COAs	Conditions of Approval	ONA	Outstanding Natural Area
CSU	Controlled Surface Use	ORV	Off-Road Vehicle
DFCs	Desired Future Conditions	PCA	Prairie Chicken Areas
DPC	Desired Plant Community	PV	Photo-voltaic
CSP	Concentrated Solar Power	PODs	Plans of Development
EA	Environmental Assessment	PPA	Primary population Area
EIS	Environmental Impact Statement	RMP	Resource Management Plan
EO	Executive Order	RNA	Research Natural Area
EPA	U.S. Environmental Protection Agency	SHPO	State Historic Preservation Office or Officer
EPS	Economic Profile System	SHSs	Standard Habitat Sites
ESA	Endangered Species Act	SDA	Special Designated Area
EQIP	Environmental Quality Incentives Program	SLO	State Land Office
FCRPA	Federal Cave Resource Protection Act	SMA	Special Management Area
FLPMA	Federal Land Policy and Management Act of 1976	SSPA	Sparse & Scattered Population Area
FMU	Fire Management Unit	STL	Standard Lease Terms
FMP	Fire Management Plan	TDS	Total Dissolved Solids
FMU	Fire Management Unit	T&E	Threatened and Endangered
FO	Field Office	TL	Timing Limitations
FRCC	Fire Regime Condition Class	TPWD	Texas Parks & Wildlife Department
HMA	Herd Management Area	USC	United States Code
HMP	Habitat Management Plan	USFWS	U.S. Fish and Wildlife Service
IM	Instruction Memorandum	VRM	Visual Resource Management
IPA	Isolated Population Area	WSA	Wilderness Study Area
MLRAs	Major Land Resource Areas		
MOU	Memorandum of Understanding		

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